Supreme Court, U. S.
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APPENDIX

In the Supreme Court of the United States

OCTOBER TERM, 1979

No. 78-1815

CECIL D. ANDRUS, SECRETARY OF THE INTERIOR,
Petitioner

—*v.*—

SHELL OIL COMPANY AND D. A. SHALE, INC.

ON WRIT OF CERTIORARI TO THE UNITED STATES
COURT OF APPEALS FOR THE TENTH CIRCUIT

PETITION FOR WRIT OF CERTIORARI FILED JUNE 4, 1979
CERTIORARI GRANTED OCTOBER 1, 1979

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COMPLETE DOCKET ENTRIES OF UNITED STATES DISTRICT COURT FOR THE DISTRICT OF COLORADO IN DOCKET NO. 74 F-739

DATE	PROCEEDINGS

1974

8-20 COMPLAINT-pd
Summons Issued

3-26 Marshal's return of service on Attorney General and Roger C. B. Morton on 8-21-74

10-21 ANSWER OF Defts to Complaint . . . Cert of Service.

12-16 PRETRIAL CONFERENCE SET January 24, 1975 at 11 AM.

1975

1-27 Plaintiff's statement concerning nature of case and time required for briefing motions for summary judgment.

Stipulation of counsel advising of how case is to proceed. Signed (SGF) Pre-Trial Order . . . Counsel have until April 15, 1975 to file and serve motions for summary judgment . . . answer briefs are be filed 45 days thereafter and 15 days thereafter to reply.

4-10 MINUTE ORDER (SGF) . . . ORDERED: that extension of Time is granted for the filing of Motions for Summary Judgment to 4/18/75 . . . Clk's C.O.M. . . . eod 4/16/75

4-15 Pltf's MOTION for Summary Judgment

Certificate of Service of above MOTION, Findings of Fact & Brief

Pltf's Proposed findings of Fact (in blue binder)

Opening Brief for Pltf for Pltf

4-17 Defts' MOTION for Summary judgment . . .
Memorandum of points and Authorities in Support of Motion for summary judgment. . . . C.O. Service.

DATE	PROCEEDINGS

1975

4-30 Statement in Support of Admisisons of Fowler Hamilton, and Donald L. Morgan.

HEARING (SGF) . . . Admission of Counsel . . . ORDERED. An the oral motion of James Dean, Fowler Hamilton and Donald L .Morgan are admitted to practice for the purposes of this case. All documents filed are to bear the signature of local counsel . . . Recess . . . eod 5/1/75.

5-1 Memorandum of Points and Authorities in Support of Dfdt's Motion for Summary Judgment

5-30 Pltf's Answering Brief . . .

Brief for the contestees on the Order of Trial, the Burden of Presenting a Prima Facie Case and the Burden of Proof . . .

Certificate of mailing re Above.

6-2 Defts' Answering Brief . . . C.O. serviec.

6-16 Dfdt's Reply Brief . . . C.O.S.

Reply Brief of D.A. Shale, Inc.

Reply Brief on Pltf Shell Oil Co.

Attachment to Reply Brief of Shell Oil Co.

Certificate of Service of Reply Brief & Attachment of Shell Oil

6-18 Certificate of Service of Reply Brief of D.A. SHale, Inc.

7-8 Dfdt's Proposed Findings of Fact . . . C.O.S.

8-6 Copy to ltr to SGF re: Administrative record and affidt.

8-19 JOINT MEMORANDUM with respect to oral argument . . .

1976

7-12 Notice of Change of Address and Firm Name of plf counsel

DATE	PROCEEDINGS

1977

1-17 Sgd (SGF) ORDER . . . Plf Motion for Summary Judgment GRANTED . . . Def Motion for Summary Judgment DENIED . . . by 2/1/77 plfs to submit Order and Judgment setting forth claims w/particlularity and implementing court's ruling herein . . . CLk's COM . . . eod 1/18/77

1-31 Certificate of Service of proposed judgment

2-10 Sgd (SGF) JUDGMENT . . . judgment enter for plfs againd def as follows: decision of Board of Land Appeals REVERSED . . . applications to patent plfs claims REMANDED to Dept of Interior . . . court retains jurisdiction for purpose of entry of further orders as may be necessary for carrying out this judgment or court's order of 1/17/77 granting summary judgment for plfs . . . each party to pay own costs . . . Clk's COM . . . eod 2/11/17

4-8 Defendant's NOTICE OF APPEAL from the Judgment of the U.S.D.C., granting the Plaintiff's Motion for judgment entered 2/10/77 . . . 8:15 a.m. Conference 4/18/77 —RECORD DUE 5/18/77.

Exhibit C-220. September 29, 1913, "Preliminary Report of the Oil-Bearing Shales Situated at Grand Valley, Colorado," made for the Reed-Midwest Investment Co., Colorado Springs, Colorado, by John C. Sparks, B. Sc., F.C.S., 30 Church Street, New York (pp. 1, 25-27, 29, 37-39):

At your request, communicated to me through Mr. C. A. Fisher, I went to the shale deposits situated in the bluffs north end northeast of Grand Valley, Colorado, arriving there August 14 and I subsequently made an examination on the ground and took samples for examination. I have considered carefully all the contributing data on the subject in regard both to the composition of the shale, the yields that may be obtained from it, the expense attached to the manufacture, the market price that may be obtained for the products, and herewith hand you my report.

From an examination of the oil produced, I am of the opinion that 5% would be gasoline, which I figure at 10¢ per gallon, 10% kerosene at 6¢ and 85% fuel oil at 7½¢. From an examination of the oil, I find that without the use of a wax plant, 4% by weight of crude wax can be separated from the oil worth approximately 3¢ per pound. Basing this on the yield shown here, which however, I know is an underestimate, the values produced per ton are as follows:

Gasoline,	2.66 gallons at 10¢	0.266
Kerosene,	5.23 gallons at 6¢	0.314
Crude Wax,	17 pounds at 3¢	0.51
Fuel Oil,	43.2 gallons at 1½¢	0.648
	Making a total of	$1.74 for the oil

The average amount of sulphate of ammonia produced by these different layers is 36.43 pounds per ton. The wholesale price of sulphate of ammonia is now $63 per ton, that is to say 3 1/15¢ per pound which amounts to $1.14 per ton. The total value produced therefore is $2.88. The valuation of 1½¢ per gallon for the fuel oil is lower than any figure I have seen in the country since the recent rise in the price of oil. This is only 60 cents

a barrel and I do not know of any oil, especially any paraffine base oil, at this price. Here in the east fuel oil is 6-1/8 cents per gallon, this price being obtained from the oil companies and checked by inquiries from the Diesel Engine Co. and the De La Vergue Machine Co. Both of these concerns tell me that their business in oil engines has been seriously crippled owing to the high price of oil.

In regard to the present value of sulphate of ammonia, I have been lead to understand that an impression exists in your mind that the price is liable to drop on this commodity. Studying the subject for a number of years and considering that this is a product with a world market, and, therefore, figures in other countries may be considered as well as figures in our own country, I wish to make a few quotations from "Oil Shales of the Mid-Lothians" published in Scotland. On page 139, price of Sulphate of Ammonia is given and on the following page the quantities manufactured during these periods is also given.

Year	Value in Shillings	Quantity Produced
1893	200	152,762
1903	250	263,664
1910	255	367,537
1912	275	———

The figures for 1912 were not available but the quantity has materially increased since that time. Taking up the subject from the point of view of our own market here in this country, I would direct your attention to "Oil, Paint & Drug Reporter" for September 8th, 1913, and refer to their Fertilizer Market reports on page 60. Under the heading of New York, September 6th, 1913, they quote:

> "Prices of sulphate of ammonia have hardened during the past week, and sellers are now holding firmer views regarding spot and shipments. Quotations have ranged as high as $3.15 for Fall delivery. Demand for sulphate is moderate, but inquiry has increased and a good Fall business is looked for.

> The markets abroad are likewise firmer, as reports state that any increased sale from the United States will result in driving prices to still higher levels. Foreign advices state that demand from foreign districts has augmented, and prices on this side have improved to the extent of 5s. The tendency is toward higher prices, but it is not very strong so far. Japan and the U.S.A. have sent considerable inquiries, as also Germany, to moderate extent, most of it for this year and some extending to Spring. For near delivery 13 L to 13 L 2 s. 6 d. has been paid, and there are buyers for say Jan - June next at L 13 7 s 6 d F.O.B. The approach for harvesting the corresponding crops will bring the article more in request so much more as some of our big customers have remained absent for any unusually long time."

In the same paper the Baltimore report states as follows:

> "The one development of marked note was a further rise in the price of sulphate of ammonia, which material has shown renewed strength of late, after a decline, and is now quoted at $3.15 from October to March, a jump of more than 10 cents in a week. Just what is causing the rise is apparently not known here, the suggestion is made that large purchase for Japanese account may be responsible for the rise, involving as they do, heavy demands upon the available supplies."

The Census report for 1909 gives the following figures on the value of ammonia sulphate produced in this country.

Year	Value	Quantity Produced
1899	$186,609.00	4120 tons
1904	600,856.00	10540 tons
1909	3,640,592.00	63381 tons

From a study of this table, you will see that not only has the quantity increased enormously, more than 600% in the five years from 1904-1909, but that also the price has steadily increased.

As a matter of fact the ammonia sulphate value has increased more than the general fertilizer values as the same census report states that between 1900 and 1904 the value of all fertilizers increased 26.6% and between 1904 and 1909, the value of all fertilizers produced increased 83.9%. During the later period as shown above, the ammonia sulphate value increased practically 600%. Further data on this subject is obtained from Senate Document, Volume 6, being a portion of the official document of Section 11 of the 62nd Congress, 1911 - 1912. This Senate document is entitled "Fertilizer Resources of the United States and on page 121 it is stated that only one-third of the ammonia sulphate used in this country is manufactured in the United States and that two-thirds is imported.

The cost of mining varies directly with the thickness of the seam. In Scotland on a 5 to 7 foot seam, two men can get out eight tons per day between them. On a smaller seam of 5 to 6 ft. the men can get out only about six tons between them.

In the Colorado shale there exists one good bed, shown in the graphic map page 20 as samples 105, 103, 104 and 106, of about 23 feet. At sample 109 is shown a bed 12 feet 8 inches. At sample 113, a bed eleven feet thick. On account of the large width of the seam, the thickness and continuity, I believe the shale can be mined and landed at the retorts for a maximum of ninety cents per ton.

The shale would be removed by the panel system and will not, I believe, need props as the columns of shale left standing will be amply sufficient to support the room. It must be remembered that the shale exists in and is adjacent to, both above and below, other seams and not brittle material as in Scotland.

The shale exists at an elevation and not in deep underground workings requiring expensive hoisting machinery. This is an important point. I have gone carefully into the question of conveying the shale by a gravity slide and while this can be done at the first proposed location it could, from the accounts I have received, be done more easily and cheaply at the second location, Rulison Ridge.

Referring back to the value of the produced on page 24, it will be shown that the oil products were values at $1.74 per ton of shale and the ammonia value at $1.14, making a total value of $2.88 per ton of raw material. On page 47 the cost of mining is given at 90 cents; on page 48, the cost of eduction is figured at 50 cents; and on page 52 the cost of the ammonium sulphate is 47 cents per ton, a total of $1.87 for costs. To this cost will have to be added certain overhead expenses such as interest on and maintenance of the railroad switch, storage tank, storage bins, superintendents, selling expenses, cost of pumping, etc. which however, will not be a large item in a plant of a capacity of 500 tons of shale per day as a minimum. In my opinion, there is a margin of profit of in the neighborhood of 75 cents per ton of shale.

I however, wish to state that more accurate figures on the cost of the plant on which a more accurate determination of depreciation and interest can be made, should be obtained. In the same way a more accurate determination of the cost of sulphuric acid in large quantities, a more reasonable adjustment of the freight rate from Denver to Grand Valley and an investigation into the possibility of utilizing the sulphur contained in the shale instead of buying sulphuric acid, should also be made.

SUMMARY

1. The deposit of shale at Grand Valley, Colorado is large and has been proven on the fact ten miles long, having a depth up Parachute Valley of approximately 3 miles. The quantity of shale is amply sufficient to maintain a large works for an extended period, 8040 acres have already been obtained, giving ample supply of raw material.

2. The shale in its most workable seams contain approximately 55 gallons of oil and 36 pounds of ammonium sulphate per ton. There exists one seam of workable shale 10.6 feet in depth; another 25 feet in depth; another seam 11 feet in depth and an upper seam 16 feet in depth.

3. The good shale contains approximately 40% volatile matter, 1.35% sulphur and 5.5% nitrogen. The nitrogen only requires ⅓ of the total sulphur for conversion into sulphuric acid and this point should be investigated.

4. The continuity of the shale is proven at a number of points being shown to exist in a uniform bed unaffected by local physical conditions.

5. A satisfactory plant location was selected at which the shale could be transported by seams of a gravity slide. Another plant location, namely Rulison Ridge, should be investigated and a proper comparison made as to the selection of the better location.

6. Sulphate of ammonia has been gradually and steadily increasing, both in quantity use and in price. From the indications of the available data, both the quantity and price show a tendency of still increasing.

7. The water available in the Grand River is suitable for the purposes required.

8. The products produced have a total value of $2.58 and the cost of extracting the products in a commercial form is $1.57.

9. The estimated profit per ton is 75 cents.

10. The cost of the plant and equipment, including working expense, would require a capital of between $400,000 and $500,000.

11. Comparison between the cost of operation and the value of the products shows that the plant could be operated to give a good reasonable profit on a permanent basis and that therefore the deposit of shale at Grand Valley is worthy of more careful consideration.

Exhibit C-714. February 12, 1916, Hearings before Senate Committee on Public Lands, "Leasing of Oil Lands" (pp. 301, 320):

STATEMENT OF MR. E. C. FINNEY, BOARD OF APPEALS, DEPARTMENT OF THE INTERIOR

Mr. FINNEY. Mr. Chairman, I want to suggest to the committee an amendment to the general leasing provision of this bill, to include deposits of bituminous shale or rock.

The CHAIRMAN. Where should that go in, Mr. Finney?

Mr. FINNEY. As a separate section; probably section 19. It has been suggested to the department by the Geological Survey that there are large areas of rock of this character in Colorado and Wyoming from which can be extracted oil; possibly not when free petroleum is very cheap, but as it becomes higher in price it will pay to extract from this bituminous shale the oil. That would not interfere, of course, with the other use or disposition of the surface of the lands.

These areas are not at the present time covered by withdrawal, and the thought would be to simply give the Secretary of the Interior authority, should anyone desire, to lease these areas of bituminous shale or rock for the extraction of oil. . . .

STATEMENT OF DR. GEORGE OTIS SMITH, DIRECTOR OF THE GEOLOGICAL SURVEY

Mr. SMITH. I simply wish to put myself at the pleasure of the committee to answer any questions that may have come up before you.

With regard to the amendment which has been offered by the Secretary of the Interior and was read by Mr. Finney, that is predicated upon the realization that some time in the future—I will not attempt to say exactly when—we will have to look to some other sources than the present supply of petroleum for the many products that are made from crude oil.

We know that this oil shale occurs in large deposits in western Colorado, eastern Utah, and possibly up into Wyoming, but the oil-bearing portion of the deposit thins as it goes north. We know there are productive measures of that shale, which we call oil shale, simply because oil can be extracted from it or distilled from it.

Senator THOMAS. Have you seen the report of the Secretary of the Interior, which was perhaps prepared by you in answer to a resolution of the Senate?

Mr. SMITH. Yes; I have a copy of that.

Senator THOMAS. It was laid on our desk yesterday, and it was a very illuminating document.

Mr. SMITH. Yes, sir. There are a few paragraphs which give the quantity of oil shale. We do not go into the figures with regard to the content of oil, but we can simply say that it figures out into the billions of barrels. It is something that we will utilize some time.

Senator THOMAS. There is one thing in the report that I noticed very particularly, because I had not known it before, and that is that oil and gasoline had been extracted from these shale formations in Scotland, and they had been doing that for some time.

Mr. SMITH. And they are being extracted this year. I have heard that they are getting a little more for one of the by-products this year, and the industry has been stimulated by that, possibly, but it has been going on for many years.

Senator CLARK. Has not the investigation proceeded to a considerable extent, so that practical oil men have been looking to these shale beds, and have been experimenting with them; they have been ascertaining very closely the cost of production of oil from those shale beds and are looking confidently to the use of them in the industry in the not distant future?

Mr. SMITH. I do not know the particulars of that, Senator, but I think it is true. . . .

Exhibit C-90. April 11, 1916, Letter to the Secretary of the Interior from George Otis Smith, Director, United States Geological Survey (pp. 3-4):

The department can probably regard lands containing oil shales as coming within the purview of either the lode or the placer act without placing a particularly strained construction upon those acts. The type of reasoning applied in the Harry lode mining case (41 L.D., 403), in which it was decided that deposits of phosphate rock are subject to disposition only under the provisions of the lode mining laws, would apply equally well to the oil shales. On the other hand, the extension of the placer act by the law approved February 11, 1897, to lands containing petroleum or other mineral oils, can logically and without strained construction be extended to deposits of the types herein considered. Although either construction is quite

possible, the latter appears to be more in harmony with the intent of the statutes and if adopted would bring all classes of oil-producing land under the same law, and that the more fitting one because of the lack of the apex feature and the complications that arise from it under the lode law.

It appears to me therefore that Senator Myers may well be informed that although the question appears to be a new one and no specific case involving it is before the department, your preliminary opinion is that the placer law is applicable.

Exhibit C-89. May 12, 1916, Letter to E. C. Finney, Member, Board of Land Appeals, from Commissioner, General Land Office (p. 1), and attached undated memorandum from Mr. Howard, Chief, Division N (pp. 17-18):

Referring to your note of the 13th of April last, I return herewith the letter prepared by the Geological Survey for the Secretary's signature in re bituminous shales and all papers which accompanied said letter. I have caused the matter to be considered by Mr. Howard of this office, and hand you herewith a memorandum in the matter which has been prepared by him. There has also been prepared and is herewith submitted a letter for the Secretary's signature to take the place of the one prepared by the Geological Survey. . . .

The question is a very novel one, and yet if we have regard to the exact language of the statute (the act of 1897), and the language of the Department in the case reported in 39 L. D., supra, it would appear that a discovery of oil-shale, yielding by distillation mineral oil in sufficient quantities to justify a prudent person in the expenditure of money and labor in the exploration of said shale oil petroleum, is subject to location and entry under the provisions of said act of 1897.

Considering the newness of the question and the dearth of decisions with reference thereto, so far as this country is concerned, may I respectfully suggest that the matter also receive consideration at the hands of the Law Board.

Exhibit C-88. May 16, 1916, Letter to Senator Henry L. Myers from First Assistant Secretary of the Interior Andrius A. Jones (pp. 2, 5):

It appears from your previous letter that Mr. Walker is in doubt as to whether the locations above referred to, held under the Petroleum Act, are sufficient title and whether the Company can hold the oil shale deposits under the Petroleum Placer Act, in consequence of which he sought to get a ruling on the matter from the Land Department before proceeding with the erection of distillation machinery at a heavy cost. . . .

It is always, in every case, a question of fact, to be determined after the matter is regularly presented to the Department, as set forth in said departmental letter of January 19, 1916, whether a discovery has been made or exists within the limits of the claim or location and each of them, and until the matter is regularly presented the Department must decline to express a binding opinion in the premises; but it would seem that a discovery by competent locators, locating in good faith, of oil shale, upon the unreserved, unappropriated and unwithdrawn public domain, capable, by approved methods, of yielding oil in sufficient quantities so as to make the land chiefly valuable therefor, would be a sufficient compliance with the provisions of said Oil Placer Act of 1897, and that locations based upon such a discovery must be made and entered, if at all, under the provisions of said Act of 1897.

Exhibit G-81. May 23, 1916, Letter from George Otis Smith, Director, U.S.G.S., to Commissioner, General Land Office (pp. 1-2):

The oil shales of western Colorado and adjoining areas constitute an undeveloped source of petroleum to which attention was called by the Geological Survey of 1901, and it is now recognized as possible that these shales will prove equally important as a source of nitrogen. During the field seasons of 1913, 1914, and 1915, reconnaissance examination in this region was actively carried forward, and it was demonstrated that over wide areas

oil shales are present which average higher in petroleum content that these commercially worked in other countries. The average shale tested within the area examined yields more than one-half barrel of crude oil per short ton of rock and a yield of one barrel per ton is not uncommon.

The net result of oil shale investigations already made is that the oil-shale areas in Colorado, Utah, and Wyoming constitute a latent petroleum reserve whose possible yield is several times the estimated total remaining supply of petroleum in the United States.

While the data at hand are not sufficient to warrant a specific statement as to the total recoverable nitrogen content of those shales, it is believed possible that this will prove so large as to give these deposits a value as a source of nitrogen equal to their value as a source of petroleum.

In view of the high prospective mineral value of lands underlain by oil-shale deposits it is, of course, apparent that they should not be permitted to be acquired under the nonmineral land laws. The lands have not been recommended for withdrawal because the oil-shale industry is not yet developed in the United States, and as it is desired to give opportunity for the establishment of experimental plants, it is believed the lands should remain open for the present to acquisition under the mineral-land laws, even though they are ambiguous and but poorly adapted to deposits of this type.

Accordingly, I hereby classify the tracts listed below as mineral lands, valuable as a source of petroleum and nitrogen, and request that you make the proper notation of the classification upon your records: . . .

Exhibit G-31. June 29, 1916, Letter to Register and Receiver, Glenwood Springs, Colorado, from Commissioner, General Land Office (pp. 1-2):

I have to advise you that the Director of the U.S. Geological Survey by his letter of May 23, 1916, classified the lands described on the inclosed photographic copy of extract of said letter as mineral lands, valuable as a source of petroleum and nitrogen.

This classification, being made without withdrawal, will be operative under and subject to the provisions of the act of July 17, 1914 (38 Stat. 509), entitled—

> "An Act to provide for agricultural entry of lands withdrawn, classified, or reported as containing phosphate, nitrate, potash, oil, gas, or asphaltic minerals."

The lands thus classified are subject to appropriation, location, selection, entry, or purchase, if otherwise available, under the non-mineral land laws of the United States, whenever such location, selection, entry or purchase shall be made with a view of obtaining or passing title with a reservation to the United States of the deposits on account of which the lands were classified or reported as valuable, together with the right to prospect for, mine, and remove the same; provided, all applications to locate, select, enter, or purchase under this provision shall state that the same are made in accordance with and subject to the provisions and reservations of the act of July 17, 1914, supra.

The unappropriated lands so classified are also subject to mineral exploration, location and purchase under the United States mining laws and regulations.

You will make the following notation on your tract books opposite the lands hereinabove described:

> "Classified as mineral lands, valuable as a source of petroleum and nitrogen, by U.S.G.S., May 23, 1916,"

and refer to this letter by date and number.

Promptly acknowledge receipt and report action.

Very respectfully,

/s/ [Illegible]
Commissioner.

Board of Law Review,

/s/ [Illegible]
6-28-EU

Exhibit C-64. September 15, 1916, Letter to Secretary of the Interior from Acting Secretary of the Navy, Franklin D. Roosevelt (pp. 2, 4):

Various official reports of the Interior Department indicate that the petroleum deposits of the United States are being progressively extracted, and at such a rate that it will be a matter of only a few years before it will be necessary to supplement the petroleum yield with oil derived from shale, if the Navy's urgent, extensive, and increasing need of the future is to be met.

The possibilities as regards procuring oil from our extensive shale deposit, has been strikingly and forcibly presented by the Geological Survey. The Navy Department therefore requests that the Geological Survey will select a suitable and accessible oil shale deposit on the public domain, and that the Interior Department will join this Department in requesting the President to take early action in setting aside such a selected area as a Naval Oil Shale Reserve . . .

There are exceedingly cogent and impelling military and strategic reasons, however, why early action should be taken upon this matter. The procuring of these Reservations can be obtained at this time without arousing any considerable amount of objection, while if action is delayed it certainly can be expected that progressive opposition will be aroused to such designation when the value of the oil shale deposits becomes known. In brief, this phase of the Problem of Oil vitally affects both the industrial and military interests of the Nation and is worthy of immediate consideration.

Exhibit C-67. November 15, 1916, Letter to the Secretary of the Interior from George Otis Smith, Director, U.S.G.S. (pp. 2, 3):

Two areas have been selected, one in Colorado, and one in Utah, in order to safeguard against the reduction of the reserves through the existence of valid claims not of record in the Department of the Interior. So far as known to the Survey, none of the lands included in the Colorado area have been patented and in Utah the patented

school lands that lie within the selected area have not been included in the order. Present information indicates that each of the two areas selected should yield at least the amount of oil which the Secretary of the Navy desires to have reserved, and probably much more. The Colorado area is near transportation, being but a few miles north of the Denver and Rio Grande Railroad, and includes a part of the richest of the known oil shale deposits. . . .

Because of the apparent richness of these deposits it has not been necessary to select particularly large areas, only parts of eight townships being involved, the total acreage being less than that of six full townships. The selected areas are in arid sections of Colorado and Utah, where the land is of little agricultural value. . . . Furthermore, the unreserved oil shale areas are so greatly in excess of those reserved that the interference with any commercial oil shale industry that may be established will not be serious.

Exhibit C-5. Annual Reports for the Fiscal Year Ending June 30, 1917, of the Secretary of the Interior (p. 73), the Geological Survey (pp. 903, 512), and the Bureau of Mines (p. 610):

As a result of the investigations of the western oil shales, it is believed that it is now commercially feasible to work selected deposits of shale in competition with oil from oil wells, and that these oil-shale reserves can be considered of immediate importance to the oil industry and to the defense of the Nation. . . .

The investigation of the so-called hydrocarbons or oil-shale deposits of the country, begun four years ago by the Survey, has been diligently prosecuted. The extension of the oil shales of the Uinta Basin wertward toward Green River in Utah has been mapped, with the discovery of new areas, so that it is now estimated that there is enough of this shale, in beds 3 feet or more in thickness and capable of yielding more than 22 gallons of oil to the ton by distillation, to provide as much as 40,000,000,000 barrels of petroleum. The Uinta Basin contains a

vast storehouse of petroleum in this form, the volume of which is better realized when it is recalled that all the oil that has yet been produced in the United States is but about 3,500,000,000 barrels. The oil fields of the United States are now producing a little over 300,000,000 barrels of petroleum a year, which is about two-thirds of all that is yearly taken from the ground the world over. What new oil pools and fields may yet be discovered in other parts of the world, particularly the less explored regions, no one can foretell, but it seems probable not only that oil will be distilled from the shales of the Green River group long after the principal oil fields of the world have been exhausted but also that the total amount that will be obtained from this source may exceed the world's total production of natural petroleum. The standard of richness named in the above estimate is said to be up to the average of the Scotch shale, which has for many years been the basis of a large industry and which is now providing distillate for British naval and military uses.

A report showing the distribution of the oil shales in Colorado and northeastern Utah and giving analyses and the results of rough tests and laboratory experimental distillations, nitrogen determinations, etc., has been issued as Bulletin 641-F, and another report describing the westward extension of the deposits, with additional details as to the composition of the shales, is now ready for publication. A report giving the results of distillation tests of richly bituminous shales in several of the Eastern States has been issued as Bulletin 641-L. . . .

Oil-shale withdrawals.—Of special interest during the year was the creation of two naval oil-shale reserves, one of 45,440 acres in Colorado and one of 86,584 acres in Utah. Lands included within these reserves are not subject to agricultural or mineral entry and in that respect differ from the classified oil-shale land.

The classification of oil-shale land in Utah was continued in 1916, and large areas have been added to the classified mineral lands. Field examination by the Survey during the four seasons of 1913-1916 has shown that the potentiality of the oil shale of this region as a source

of petroleum is enormous. There is also locked up in these shales a vast amount of nitrogen which can be recovered as a by-product in the refining of the shale and used in the manufacture of fertilizers, explosives, etc. . . .

INVESTIGATIONS OF OIL SHALES.

During the year the Bureau of Mines has been particularly interested in the vast deposits of oil shales in Colorado and Utah that have been disclosed by the field investigations of the Geological Survey. Because of the threatened shortage of petroleum from oil fields in the future these shales are considered to be the principal reserve in this country for the future supply of gasoline and other petroleum products. Consequently, much attention has been given to preliminary investigations of the richness of the shales, and a detailed study is being made of the best methods of obtaining oil from the shales, the character of the shale oils and the proportions of the various oil products and by-products obtainable by different methods of distillation. The investigations made lead to the belief that it is now commercially feasible to work selected deposits of shale in competition with oil from oil wells, and that these oil-shale reserves can be considered of immediate importance to the oil industry. Several commercial plants for mining and treating the shale have been planned and the Bureau of Mines will closely follow the developments. It is believed these investigations have already demonstrated a reserve of oil adequate for all future needs of the Navy. This investigation was in charge of D. T. Day, consulting chemist.

Exhibit C-388. September 8, 1917, Letter to Representative Edward Taylor of Colorado from Director, U.S.G.S. (p. 1):

In response to your call at my office on September 5th, relative to the contemplated oil-shale withdrawal in Garfield County, Colorado, mentioned in Mr. James Doyle's letter to you of August 31, 1917:

There seems to be some misunderstanding regarding the proposed oil-shale withdrawal in Garfield County,

Colorado, referred to by Mr. Doyle, as no withdrawal of oil-shale lands is contemplated by the Government at the present time. It is true that the Government, and particularly the Geological Survey, has spent considerable time and money in the last few years in the study of the oil-shale deposits. As a result of the field examinations made from 1913 to 1916 it has been clearly demonstrated that the latent potentiality of the oil shale of this region as a source of petroleum is enormous. It is also known that there is locked up in these shale a vast amount of nitrogen which can be recovered as a by-product in the refining of the shale and used in the manufacture of fertilizers and explosives. With all this information at hand, the Government has consistently held that the oil shale lands should not be withdrawn, but should be classified as mineral land and made available to the public under the United States mining laws. Following this policy, the first classification of oil shale lands was transmitted to the Commissioner of the General Land Office by the Survey, May 26, 1916. * * * The only oil shale lands in Colorado that have been withdrawn for Government purposes are those embraced in Naval Oil Shale Reserve No. 1, Colorado No. 1, embracing 45,440 acres.

Exhibit C-92. August 20, 1917, Letter to Secretary of the Interior from R. D. George, University of Colorado, Boulder (pp. 1, 2):

Messrs. D. D. Potter, G. W. Bowman and a few associates are about to organize a company for the exploitation of the oil shales near Grand Valley, Garfield County, Colorado. They have asked me to advise them in the matter of the location of claims, the investigation of processes and the installation of a plant for the distillation of the shales. They are well-backed financially, and are substantial and successful men in their communities.

On my advice they have located several thousand acres along the branches of Parachute Creek, as shown by the map accompanying this letter. In making their locations they have endeavored to comply with the government regulations to the fullest extent. But in order to assure

themselves that they have complied with the regulations governing the location of oil shale claims they have asked me to communicate with you in this regard.

Before further expenditure of money for roads, plant, etc. they wish to be assured by you:

1. That the lands which they have located have not been withdrawn and are not likely to be withdrawn for government purposes. . . .

3. That if they go on and fulfill the assessment or development duties and requirements they may acquire patents to said lands. . . .

In short they wish to be absolutely in the right, so that they may be assured that in so far as their relations to federal authorities are concerned their investment, and the investment of their friends with them are safe and wisely made.

Exhibit C-93. September 6, 1917, Letter to R. D. George, State Geologist, University of Colorado, from First Assistant Secretary of the Interior, Alexander Vogelsang (pp. 1, 2, 4):

I am in receipt of your letters dated August 20 and 21, 1917 . . . Under date of May 23, 1916, the public lands in these townships were classified as mineral lands, valuable as a source of petroleum and nitrogen, by the Director of the United States Geological Survey. This classification did not adversely affect valid mining locations existent at the date of classification, nor does it affect the right to make and maintain mining locations on such lands.

While the Department has not had occasion to make a decision in a proceeding involving the question, from present information, I believe that public lands containing valuable deposits of oil shale are subject to entry and patent under the placer mining laws. One who has made a valid location of a tract of the public land under the United States mining laws, acquires a right to the possession thereof, which he may enjoy as long as he complies with such laws.

In conclusion, I may say that, in view of the status of these lands, so far as shown by the records of the General Land Office, and the laws relating to placer mining claims, there appears to be no reason why these parties will not be fully protected, if they have made bona fide locations and shall proceed to the development of the mineral deposits thereof.

Exhibit C-209. October, 1917, Railroad Red Book Article by R. D. George, State Geologist, Colorado Geological Survey, "Oil Shales in Colorado":

OIL SHALES IN COLORADO

By R. D. GEORGE
State Geologist, Colorado Geological Survey

Reprinted from The Railroad Red Book of October, 1917
Official Magazine of the Passenger Department of the

DENVER & RIO GRANDE RAILROAD

AT THE END of 1915 the total proven area of productive oil land in the United States was 4,109 square miles. So-called "oil fields" were of vastly greater extent, but the actually proven ground had the area stated. Up to that date the total production of oil from the proven territory had been 3,617,000,000 barrels, and the possible future production was estimated at 5,753,000,000 barrels. These two figures added give the estimated total original content of the proven fields as 9,370,000,000 barrels. This would be 2,271,000 barrels per square mile for the original content, and 1,400,000 barrels future production per square mile.

In northwestern Colorado alone we have over 1,500 square miles of territory in which there are commercially workable oil shale beds averaging over 20 feet in aggregate thickness, and capable of yielding at least 36 gallons of oil per ton of shale. (No beds under four feet thick are included in this estimate.) These figures are very conservative, and I believe far below the mark, and

yet their meaning is astounding. In one acre of this area there would be 37,500 barrels of oil. In each square mile there would be 24,000,000 barrels. This is over ten times as much as was originally contained in each square mile of the proven oil territory of the United States, and seventeen times as much per square mile as now remains in the proven fields. If we consider the whole area of 1,500 square miles of oil shales in Colorado we have an oil content of 36,000,000,000 barrels, or just under ten times as much as has been produced in this country since the discovery of oil in 1859.

Are these merely interesting facts or have they any commercial significance? In Scotland, France, Australia and New Zealand similar shales are being distilled, and the resulting crude oil is refined and made to produce a great variety of commercial products. The Scottish shale oil industry was started about 1850, and is flourishing today as never before. The dividends paid by the operating companies range from 7 per cent to 50 per cent, and the average dividend of the six companies is about 18 per cent. Omitting two companies working on very thin shale beds, the average dividend would be 24 per cent.

A comparison of conditions in Scotland with those in Colorado may help to answer the question.

The Scottish shales lie far below the surface on which the treating plants stand, and have to be hoisted through shafts or hauled up inclines. The Colorado shales lie from 1,000 to 2,500 feet above the valley floors where plants should be erected, and can be lowered by gravity.

The Scottish shales are in irregular beds, which thicken and thin out, are faulted and thrown into folds which greatly increase the cost of mining. The Colorado shale beds are constant and uniform in thickness, lie in horizontal position and are neither folded nor faulted.

The Scottish shale layers vary in oil content from place to place. The Colorado rock is very constant in its oil content.

The Scottish shales as worked average 30 U.S. gallons of oil per ton. Vast bodies of Colorado shales in benches 6 to 10 feet thick will average over 50 gallons per ton.

The Scottish shales yield a greater amount of sulphate of ammonia than will the Colorado shales. This appears to be the only point of advantage possessed by the Scottish shale.

The Scottish shales yield the following commercial products: Gasoline, motor spirits, illuminating oil, lubricating oil, gas oil, cleaning oil, jute oil, paraffine wax, coke, still grease, sulphate of ammonia. In addition to these marketable products the shale yields a large volume of gas which is used under the retorts, and a considerable quantity of residue used as liquid fuel in the plants.

Tests by the writer and others appear to show that the Colorado shale crude will yield a higher percentage of gasoline, motor spirits and kerosene and an equal percentage of gas oil and lubricating oils. The ammonium sulphate content of the Colorado shale is probably about 20 to 25 per cent below that of the Scottish shale.

Phenols are present in what appears to be commercial quantity. From these may be produced many commercial products not obtained from the Scottish shale.

The shales are heated in retorts arranged in groups of four over a single fire-box. These groups are arranged in benches of 64 retorts each. The average capacity of the Scottish retorts is about four tons per day. The vapors pass over from the retorts into condensers in which the crude oil is collected. The uncondensible gases pass on into the ammonia plant, in which the sulphate of ammonia is collected. After this they are used as fuel.

The refinery is in most respects similar to our oil refineries.

At the present time the demand for petroleum products far exceeds the current supply. As a consequence the oil reserves are rapidly decreasing, and the government is asking for retrenchment in the use of gasoline and other power products.

There can be no reasonable doubt that these shales are the raw materials for very large and very profitable industries in the state.

Exhibit C-97. December 26, 1917, Letter to Representative W. A. Ayres from First Assistant Secretary of the Interior Vogelsang (p. 1):

Large areas of land in Colorado, Utah, and Wyoming, have been classified by the Department as mineral land valuable for oil shale. The land is classified, except two small areas, one each in Colorado and Utah which have been set aside as Naval oil-shale reserve, are open to mineral entry under the mining laws of the United States and to nonmineral entry in accordance with the provisions of the Act of July 17, 1914, the shale deposits when entries are made under this act being reserved for separate acquisition under the mineral land laws. . . .

Exhibit C-72. February 2, 1918, Letter to U.S. Attorney General from First Assistant Secretary of the Interior Vogelsang (p. 1):

I am in receipt of your letter of January 8, 1918, inclosing for information and appropriate action, a copy of a letter dated December 28, 1917 from the Special Assistant to the Attorney General relative to certain facts respecting operations upon lands within Naval Oil Shale Reserve No. 1, Colorado.

I am advised by the Commissioner of the General Land Office that the Chief of Field Division at Denver, Colorado has been directed to make an investigation for the purpose of ascertaining the facts regarding the operations within this reserve, and upon receipt of report such action will be taken as the situation may require.

Exhibit G-384. February 26, 1918, Hearings Before the House Committee on the Public Lands, "Oil Leasing Lands" (pp. 811, 812, 818, 819, 820, 823, 828, 831, 832, 896, 898, 904, 905, 913):

Mr. TAYLOR. Mr. Chairman, I have asked the State geologist of Colorado, Prof. Russell D. George, of our State university, to appear here to-day and make, on

behalf of the State of Colorado primarily, and many thousands of our people who are hoping and trying to do something toward the development of an oil shale industry in Colorado—to come before the committee and make a statement, more from a scientific and professional standpoint than otherwise.

Prof. George has been making careful and exhaustive investigations for many years and has had great experience in this matter, and I know that his knowledge will be beneficial to the committee, and I would like to have them hear him without much restriction or interruption.

The CHAIRMAN. You are recognized for an hour, Mr. George.

STATEMENT OF PROF. RUSSELL D. GEORGE, STATE GEOLOGIST OF THE STATE OF COLORADO.

Mr. GEORGE. We appreciate the privilege you have given us of coming before you, but we would like to state that the hearing is not of our seeking. The facts that we wish to present to you to-day were presented to the Department of the Interior some days ago and they requested us to make the same presentation to your committee, and it is with that in view that we are before you to-day.

The gist of the matter is that we wish to present the scientific side of an industry that is new to America, or at least new to this generation. There were shale retorting plants in this country many years ago, but since the year 1864, I believe, no shale has been distilled in a commercial way in the United States. The successful commercial treatment of the oil shales for the separation of oil and ammonium sulphate, and the refining of the crude oil for the various marketable products is an industry requiring the best scientific knowledge and the highest engineering skill. We hope that we may be able to give you a clear understanding of what the shale oil industry is, in order that your judgment may be directed toward either, (1) leaving the infant industry where it is, under the present mining laws and the present depart-

mental regulations, or (2) the speedy enactment of such legislation as may be necessary to foster, safeguard, and establish an enterprise which is destined to play a very important part in securing the industrial welfare of the country in the near future. Any delay in determining the rights and privileges of those who are engaged in the shale oil industry will militate against the growth and establishment of that industry. We wish, therefore, to leave those two points prominently before you. . . .

The oil situation of the United States is a matter that is not new to you, but I should like to present a few facts that may bring more vividly before your minds the necessity of providing something to take the place of the oil deposits of this country, which are being exhausted, and which, in a comparatively few years, will be gone beyond any possibility of recovery.

In 1914 the production of oil in this country was 266,000,000 barrels; in 1915, 281,000,000 barrels; in 1916, 300,000,000; in 1917, 341,000,000 barrels. How was this increased production obtained? It was obtained by the greatest drilling activity in the history of the United States. The probability is that the money actually expended in drilling in 1916 and 1917 exceeded by 100 per cent that ever expended in a similar time in this country. The price of oil in the crude in 1916 advanced 72 per cent. The price of finished products advanced 84 per cent. In 1917 the price of crude oil advanced about 40 per cent, and the price of the finished product, as nearly as it can be estimated with incomplete data, advanced 50 per cent. . . A little later, about three years ago, I started in again. At the time a number of men in Colorado were seriously considering the question of the treatment of the shales. Some had already located land and had begun development work on their claims. A little later, as a result of the many inquiries as to how these lands should be taken up and how they could best be worked, I wrote several letters to the Department of the Interior. One of these I addressed to the Secretary of the department; another to Mr. Manning, of the Bureau of Mines; another one to Mr. Smith, of the Geological Survey. About the same time I addressed

one to the Naval Fuel Oil Board. I shall not take time to read all these letters, but I wish to have all of them included in the records of this hearing.

The CHAIRMAN. Without objection, it is so ordered.

The letters from all the men to whom I have referred are very similar in tone, and give the best of encouragement and promise the utmost that they can do to aid in the development of these lands.

Mr. SMITH. Who gave that assurance?

Mr. GEORGE. The Bureau of Mines, the United States Geological Survey, and the First Assistant Secretary of the Interior.

Mr. TAYLOR. How many officials have given this assurance?

Mr. GEORGE. I may say that all of our correspondence and relations with the Deparmtent of the Interior have been of the most encouraging kind and the various officials have expressed the utmost good will toward bona fide endeavors to establish an industry.

Mr. SMITH. They would probably change their opinion if you should discover an oil well out there.

Mr. MAYS. Have you had anything from the Department of Justice?

Mr. GEORGE. No, sir; I have not.

Mr. MAYS. Have they in any way disturbed your plans?

Mr. GEORGE. No, sir. Some disturbing reports reached Colorado in reference to the possibility of including oil shale lands within the purview of the leasing bills now under the consideration of Congress.

Mr. TAYLOR. Didn't the Director of the Geological Survey, in answer to a letter from me, write a letter specifically authorizing me to notify everybody and authorizing me to publish his assurances that no more than 45,000 acres of the oil shale lands would be withdrawn, and that they need not be afraid to go ahead with their locations and development?

Mr. GEORGE. Yes, sir.

Mr. TAYLOR. I hold the letter in my hand, and I have notified the people and have published the assurances contained in that letter.

Mr. SINNOTT. Was the oil land withdrawn?

Mr. GEORGE. Previous to the assurances mentioned by Congressman Taylor, 45,000 acres of shale land had been withdrawn for a naval fuel oil reserve. Since that time there has been no withdrawal. Very large areas have been located for development, discoveries have been made, and assessment work carried out to such an extent that some of the locators are ready to apply for patents. . . .

Correspondence had brought out the fact that the Scottish manufacturers of shale-oil plants could do nothing for Colorado companies until some months after the close of the war. The Federal Shale Oil Co. had reached the point where they were ready to let a contract for the erection of a plant. I advised a trip of investigation to find out whether there were in America engineers qualified by first-hand knowledge and actual experience to erect a plant for the company.

In Pittsburgh I interviewed Messrs. Bacon and Hamor, director and assistant director of the Mellon Institute. The standing of these men may be judged by the fact that they have since been sent to France to take charge of the investigations connected with the utilization of gas as a weapon of warfare. These men are the authors of the best work on the technology of petroleum written in America. Mr. Hamor was one of those sent by the Canadian Government to the Scottish retorts. He is therefore familiar with the Scottish process and does not hesitate to say that the fundamental principle of that process is applicable to Colorado shales.

In New York I conferred with Dr. Chas. Baskerville, who was in charge of the tests for the Canadian Government. He is convinced of the possibilities of the industry and expressed the opinion that in view of the oil situation the industry should have been established before this.

Mr. John C. Sparks, also of New York, has done a good deal of work on the Colorado shales. He believes the Scottish process will work on the Colorado shales.

In Ottawa I discussed the matter with Dr. Haanel, director of the mines branch of the department of mines;

with Mr. Ells, of the mines branch, and with others. The question is a very live one in Canada, and the coming summer will witness much development.

In Washington I advised with the technologists of the Bureau of Mines and got much valuable information, although the lack of funds had prevented the bureau from carrying forward the extensive experimentation initiated.

I also went to the Pierce Engineering Co., of New York City, and without any intention of flattery or anything of the kind, I wish to say that I believe Mr. Pierce is by far the best informed man on all questions relating to the restoring of coal or shale or similar substances in the United States; and I believe he is the peer of any in the world on this question.

My conference with this company, and especially with Mr. Pearse, greatly strengthened my confidence (which was already strong) in the commercial possibilities of the oil shales. The time is opportune for the development of the shale-oil industry, and I believe it will go forward very rapidly . . .

The two things upon which the industry must depend are the crude oil and the ammonium sulphate. We have a rather peculiar situation regarding the fertilizer industry in the United States. The Chilean nitrate deposits from which this country drew so largely a few years ago can no longer be depended upon. We must look in our own country for a source of nitrogen. The shales offer that parts of Utah and Wyoming should yield theoretically about 41 pounds of ammonium sulphate to the ton of shale, but the theoretical is not often obtainable. The Scotch are able to save about 60 per cent of the theoretically possible content. That would leave us a return of about 28 to 30 pounds of ammonium sulphate from a ton of shale.

European countries found out many years ago that there is nothing equal to ammonium sulphate for sugar-beet culture, and that it has a very high fertilizing value for certain small grains, for potatoes, and other crops. It is a very important consideration in view of the increased demand on our food supply. Ammonium sulphate contains a larger percentage of available nitrogen than does the Chilian nitrate. . . . The Scotch shales are of

lower oil yield than ours, but they run higher in ammonium sulphate. The oil form the Colorado shales is a paraffine-base oil of very high grade. I think there is but little asphalt in it, and it promises to yield readily to certain processes of cracking by which the yield of gasoline may be very considerably increased. The lubricating oils of Scotland are among the best in the world, and there is reason to hope for high-grade lubricating oils from the Colorado shales. . . .

Mr. TIMBERLAKE. Then you do figure that by saving all of the byproducts of your process you will be able to manufacture the shale oil on a commercial basis?

Mr. GEORGE. I believe it is going to be possible to make a commercial success of it if plants of the size I have spoken of are installed and if absolutely correct scientific management is used. We can not claim any get-rich-quick game at all; that is utterly impossible. I am saying "we." I have not any financial interest in it whatsoever. I do not own a claim; I do not own a share of stock; and I have refrained from taking any financial interest because I wanted to be in a position to speak as I am speaking to-day in regard to this industry—for the people, for the State, and I believe for the Nation.

Mr. TAYLOR. Do you care to give the committee your own personal judgment, having been our State geologist for many years and having made this exhaustive research, as to what, if anything, this committee or Congress out to do in regard to this? Ought we to include it in this bill specifically and try to make some provisions to cover it, and, if so, what provisions? Or do you think that these various companies that have located under the placer law and have made discoveries ought to be specifically segregated by this bill and allowed to proceed, if they can, under the placer law?

Mr. GEORGE. My judgment would be, Congressman Taylor, that the companies which have already gone on, and which have expended their money, would be very grateful, indeed, if the present conditions could be continued just as they are under the placer act. It would

mean very much less disturbance of their plans; it would give them a feeling of security in regard to their holdings. It would seem to me that if anything is done in the way of new legislation, it would be very desirable to provide specifically for all those who have gone on and made their locations in an honest and sincere effort to develop the industry. Nothing should be done which could in any way impair their initiated rights.

Mr. TAYLOR. And in view of these departmental instructions, inducements, and assurances to them?

Mr. GEORGE. This favorable attitude of the department has been preached to them. They have been told of it through the press. You remember that in one of these letters I was authorized to make a very strong statement to all those who were interested in oil shales and who had made locations. I have taken occasion to copy paragraphs of these letters and send them out to those who have inquired, and it is the generally held view that the present condition is satisfactory. . . .

Mr. TAYLOR. I will say, Judge Raker, that Director George Otis Smith has written authoritatively and authorized me to publish a statement to the effect that the department will not make any more withdrawals of oil shale land, because they say they want to encourage the development. They have withdrawn this Colorado Naval Oil Shale Reserve No. 1, of 45,000 acres, in my home county, for the Navy alone, and they say that is enough of that, so that the rest of it is to be always open to development.

Mr. RAKER. What I understand from the doctor and from yourself is that you do not desire that this present bill should apply to the oil shale lands, and that the present mining laws should remain applicable to them as they are to-day?

Mr. TAYLOR. Yes; the Colorado people would much rather leave it that way. We would like to be let alone. But if this committee decides or Congress determines that they are going to include these shale lands in this bill, or have it by implication construed as applying to oil shale lands, then they want us to make provisions that are much more liberal than for ordinary pumping

oil wells, because shale is such a low-grade proposition and the much greater cost of a plant and for the necessary encouragement of building up an entirely new industry to take the place of threatened very great deficiency in oil. In other words, if Congress is unwilling to allow the shale lands to be administered under the placer law as they are now and let the people get a patent to them, then they want us to put in very liberal provisions in the way of acreage and not charge any royalty at all for 10 years or until it reaches an established and paying basis. . . .

Mr. TAYLOR. Mr. Chairman, I would like to have Mr. McMullin address the committee.

STATEMENT OF MR. SAMUEL G. McMULLIN, ATTORNEY AT LAW, OF GRAND JUNCTION, COLO.

Mr. TAYLOR. Please state your name, business, address, and whom you represent.

Mr. MCMULLIN. My name is Samuel G. McMullin; residence, Grand Junction, Colo. For 28 years I have been an attorney at law, and I represent the West Slope Oil Shale Protective Association, of Grand Valley, Colo., the Grand Valley Commercial Club, and the shale oil section of the American Mining Congress as attorney for this area. . . . last summer I wrote to the Commissioner of the General Land Office and got this reply, as follows (reading):

DEPARTMENT OF THE INTERIOR,
GENERAL LAND OFFICE,
Washington, July 9, 1917.

MESSRS. MCMULLIN & STERNBERG,
Grand Junction, Colo.

MY DEAR SIRS: In response to your letter of June 23, 1917 (B. M. McMullin), relative to oil-shale lands, I have to inform you that lands valuable for their deposits of oil shale, not withdrawn, may be located as placer claims. A copy of the United States mining laws

and regulations thereunder is inclosed and contains information as to the manner of acquiring title to placer claims.

There has been a withdrawal of approximately 45,440 acres of public lands to Garfield County, Colo., which withdrawal has been designated as naval oil-shale reserve No. 1, Colorado No. 1. The lands included in this reservation are not subject to appropriation in any form. The description of the land so withdrawn consists of two pages, and photographic copies thereof will be furnished at the rate of 15 cents per page.

There have been classifications, by the United States Geological Survey, under dates of May 23, 1916, and September 12, 1916, of oil-shale lands in Colorado as mineral lands, some of which are within Garfield County and some of which are also included in naval oil-shale reserve No. 1. The lands so classified, except those in the naval oil-shale reserve, are operative under and subject to the provisions of the act of July 17, 1914 (38 Stat., 509), which act provides for agricultural entry of lands withdrawn, classified, or reported as containing phosphate, nitrate, potash, oil, gas, or asphaltic minerals, the homesteader being obliged to reserve to the United States the deposits for which the lands were withdrawn or classified, together with the right to prospect for, mine, and remove the same.

Photographic copies of the descriptions of the oil-shale lands, classified as mineral, which cover 12 pages, will be furnished at the rate of 15 cents per page.

Very respectfully,

CLAY TALLMAN,
Commissioner.

DEPARTMENT OF THE INTERIOR,
GENERAL LAND OFFICE,
Washington, January 25, 1918.

Mr. F. A. WADLEIGH,
Passenger Traffic Manager,
The Denver & Rio Grande Railroad Co.,
Denver, Colo.

MY DEAR SIR: I am in receipt of your letter dated January 17, 1918, wherein you request information as to the method of filing upon and obtaining title to lands containing oil-shale deposits.

The act of February 11, 1897 (29 Stat., 526), provides in part as follows:

"That any person authorized to enter lands under the mining laws of the United States may enter and obtain patent to lands containing petroleum or other mineral oils, and chiefly valuable therefor, under the provisions of the laws relating to placer mineral claims."

It would seem that a discovery by competent locators, locating in good faith, of oil shale, upon the unreserved, unappropriated, and unwithdrawn public domain, capable, by approved methods, of yielding oil in sufficient quantities so as to make the land chiefly valuable therefor, would be a sufficient compliance with the provisions of said oil-placer act of 1897, and that locations based upon such a discovery must be made and entered, if at all, under the provisions of said act of 1897.

In regard to placer locations, see sections 2329, 2330, and 2331, United States Revised Statutes, printed on page 6 of the inclosed copy of the United States Mining Laws and Regulations thereunder. See also index to said pamphlet under the subjects Locations, Oils, Petroleum, and Placers. This, it is believed, will give you information sufficient for the purpose you desire.

There is now before Congress proposed legislation providing a system of leasing public lands containing oil deposits, but such legislation has not yet been enacted.

Very respectfully,

CLAY TALLMAN, *Commissioner.*

...

Mr. MCMULLIN. Not only did the department by the two bulletins and by the classification and by these letters encourage us to file on these lands under the placer law but they had the Geological Survey in 1915 send two men all through that territory making reconnaissance. In 1916 the same thing occurred, and in 1917 the same thing occurred, and in 1917 Dr. David T. Day came out there as the representative of the Bureau of Mines and told me in the presence of J. M. Givens and John M. Overfield, of Independence, Kans., who were my guests looking over the opportunities there, that if we went on and built a plant that the Bureau of Mines would send a —.

The CHAIRMAN. Is J. M. Givens interested out there?

Mr. MCMULLIN. No; but he has been out there, and he is very much interested. Day said they had sent him free of charge, at the expense of the department, and said his instructions were to induce in every way the installation of a plant in Colorado, Utah, Nevada, and California, as the department, for reasons given by Dr. George, was especially anxious to develop the industry.

We have known of those things; we have met those gentlemen. These companies I represent are financed almost entirely as far as they have gone, with Colorado money. In that agricultural community of western Colorado, from Leadville clear on down to Grand Junction, through Congressman Taylor's district—in Delta, Montrose, and Telluride—the mining fraternity have faith in this recourse, and we have organized our companies. . . .

Mr. FRY. I am going to answer it by saying that in our opinion we have complied with the placer laws, and having done the assessment work we would be entitled to payment, and from the records there are no fraudulent or improper entries which would prevent patents being issued.

Mr. TAYLOR. Let me supplement what you have said. Of course, Mr. Fry represents the Federal Oil Shale Co. I represent probably a hundred oil-shale companies—I represent all Colorado. I say to you this on behalf of Colorado, that if you will just expressly eliminate oil-shale lands from this bill and provide that they may

continue to be located, administered, and patented under the placer-mining law, our people would prefer to have you do it, and they will go ahead and try to get patents. If the department will not let them have patents they will be compelled then to come to Congress to get relief or try to come in and get a lease. But Dr. George Otis Smith, Dr. Manning, and Commissioner Tallman have all, for years, been urging these men to do this very thing, to locate and patent these shales under the placer law, and we do feel that, backed up with all of their letters and encouragement and classification, at my specific request, and all of their publishing to the world to the effect that "We won't make any more withdrawals of shale land; go ahead and develop them if you can, and patent them under the placer law," we do not believe they will not repudiate their actions and turn down these people who are following their specific and direct instructions right along.

Mr. MAYS. Different officials may come in.

Mr. TAYLOR. That is true, but these high officials will not welch on their own representations and instructions. Since talking with those gentlemen I believe if that kind of a provision is put in this bill it will be scrupulously recognized and enforced, and all those people who strictly comply with the law will get a patent. . . .

Exhibit C-556. April 24, 1918, Letter to The Haviland-Armstrong Co., Philadelphia, Pa., from Director, U.S. Bureau of Mines (pp. 1, 2):

You have requested me under date of April 15 for an expression of my opinion on the commercial feasibility of the oil shale industry in this country, and for a statement of the Bureau of Mines' attitude relative to the development of this industry at the present time.

Statistics dealing with crude oil production and consumption, the decline of the present proven oil territory, and the possibilities of new oil fields, all lead to the conclusion that it is only a matter of a few years under present conditions until there must be developed other sources of hydrocarbon oils than the oil wells themselves.

These courses are limited to high volatile coals, channel coal, liguites, and oil shales. Of those possibilities the oil shales offer by far the greatest promise because, in the first place, there are tremendous deposits of those shales which are easily accessible, and, in the second place, because they will yield large volumes of oil when destructively distilled.

As you no doubt know, there is now much interest and activity being displayed in the development of the oil shale industry in this country and all the estimates I have seen, which have been prepared both by engineers of this Bureau and by engineers of a number of the companies contemplating engaging in this industry, show that good margin of profit can be derived from large shale operations. It is generally admitted and understood that the shale oil industry must needs be conducted as a large scale manufacturing proposition handling a low grade material. Therefore, it seems that under existing conditions of supply and demand for hydrocarbon oils, it is now possible for an oil shale plant of large capacity to yield a satisfactory profit.

It is the function of this Bureau to promote the legitimate and most economic developments and utilizations of the natural mineral resources of this country. With this aim always in view, it is of course my desire to see the oil shale industry established as soon as possible so that when the real demand for hydrocarbon oils is thrown upon it, this industry will be so far advanced that it can take care of these demands. It seems to me that conditions are such at present that oil shale operations, if properly conducted, will be profitable, and that the industry can and will be developed by private enterprise and capital. This Bureau will certainly not consider the investment of money, labor, and material in a large oil shale plant at the present time an unpatriotic undertaking. It is time that someone did the pioneering in this industry and to the pioneer in any such enterprise belongs a great deal of credit. I assure you that this Bureau wishes to encourage in every way feasible the undertaking and legitimate development of the oil shale industry.

Exhibit C-104. November 9, 1918, Report to the Commissioner, General Land Office, on the La Paz oil shale claims, by Special Agent C. F. Levenberger and Mineral Examiner C. L. Duer (pp. 2, 6, 7, 8, 10, 11, 16-17, 19-20):

As a result of our investigations just completed, we find in this Naval Reserve the following locations:

Lignum Vitae Oil Shale Placer No. 6,
by Joseph Bellis, et al.

Oyler Oil Shale Placers 1 to 4 inclusive,
by J. L. Herwick, et al.

La Paz Oil Shale Placers 1 to 14 inclusive,
by Shoup, Doyle, et al.

Sheridan Oil Shale Placers 1 to 21 inclusive,
by Verner Z. Reed, James Doyle, et al.

Homestead Entry No. 011121,
by James A. Neilson;

Squatter's claim,
by one Fred Harlburt.

Report will be submitted on each of these claims or group of claims, separately, and we will now proceed to make report on:

LA PAZ OIL SHALE PLACERS 1 to 14 inclusive.

We find that prior to the location of this group of claims, the locators expended thousands of dollars . . . in the examination and testing of these oil shales and getting reports on the methods of extracting as practiced in the oil shale regions of Scotland. For this work some of the most eminent geologists and chemists in the country were employed. It was on the strength of the reports submitted by these experts that the locations were made and the assessment work performed by the original locators.

Of the original locators we interviewed and closely questioned the following:

James Doyle,	K. C. Schuyler,	W. F. Schuyler,
C. A. Fisher,	R. S. Hiltner,	O. H. Shoup.

We also took the affidavits of James Doyle and K. C. Schuyler who were most familiar with the original details concerning location and expenditures. These affidavits accompany this report.

From our investigation we are certain that each of the original locators of the La Paz group of oil shale placers was a locator with interest who believed in the prospective commercial value of these oil shales. . . . At a cost of $12,000.00 he has purchased a patent process for the extraction of oil from the shale and has constructed a plant near the town of Santa Maria, California. This plant is said to be about completed; has a capacity of some 50 to 75 tons of shale per day and has cost approximately $30,000.00. Mr. Reed has expressed his intention of erecting or causing to be created, an oil shale extraction plant with a capacity of not less than 1,000 tons per day on or adjacent to this group of claims. Both Mr. Reed and Mr. Doyle, the present owners of these claims, have for a number of years been, and now are, very enthusiastic over the future possibilities of the oil shale industry.

A large cliff of shale outcrops on each of the claims embraced in the La Paz group and the discoveries consisted of making openings into this shale escarpment and testing of samples therefrom by the application of heat. . . .

Colorado Naval Oil Shale Reserve No. 1 was created by Executive Order dated December 6, 1916, and is therefore subsequent to the date of discovery and location of the La Paz group of oil shale placers. The requirements of the mining laws and regulations have been met each and every year since those claims were located and therefore the creation of this Naval Reserve would have no effect on their validity.

We were informed by a representative of the U.S. Geological Survey that it was well known that bona fide oil shale placer locations existed within the confines of this shale reserve at the time it was created but that it was placed wherever it least interfered with bona fide locations. . . .

From the foregoing statements, we are of the opinion that the original locations of the La Paz Oil Shale Placer claims, as well as the subsequent transfers of title for same to the present owners, were regular in all respects. Further, we are of the opinion that these claims were bona fide locations at the time of the creation of the Colorado Naval Oil Shale Reserve No. 1 and that full compliance has been made with the mining laws and regulations. We would therefore recommend that the application for patent receive favorable action. . . .

Exhibit C-359. November 12, 1918, Report to the Commissioner, General Land Office, on the Oyler oil shale claims, by Special Agent C. F. Levenberger and Mineral Examiner C. L. Duer (pp. 6, 10):

. . . We believe the foregoing statements cover all the points of inquiry contained in your letter of January 28, 1918. The preliminary requirements regarding discovery, location, notices, as well as subsequent assessment work, have been complied with. . . .

From our investigation we are of the opinion that the Oyler placers are bona fide locations and that the requirements of the mining laws have been met up to the present time, and we would recommend that no adverse action be taken regarding these claims but that when application is filed for patent, a further examination be made to determine whether or not the requirements of the mining laws have been fulfilled. . . .

Exhibit C-98. April 11, 1919, Letter to Fred L. Morris, Lawrence, Kansas, from First Assistant Secretary of the Interior Vogelsang (pp. 1, 2):

So far as I am advised, the Department has had no such case before it for decision, but if these deposits of oil shales are valuable they are now subject to location and entry under the mining laws by citizens of the United States. Copy of the mining laws and regulations is inclosed.

As a prerequisite to patent, discovery of mineral is required and the expenditure of not less than $500 in mining and development work upon or for each claim.

Some of the most valuable shale lands in the public domain in Colorado and Utah have been withdrawn from disposition for the present. The general leasing bill, so called, which passed both Houses of Congress, but which failed of enactment at the last session because of legislative filibuster, proposes to lease oil shale lands of the United States in areas of sufficient size to warrant expenditures for their development. All of the data presented to the Department indicates that while these shales contain oil, the matter of their successful commercial extraction has not yet been finally worked out, and there is some question whether, under present conditions and prices, such plants can compete with the oil and gas produced from wells.

Exhibit C-7. Annual Reports for the Fiscal Year Ending June 30, 1919, of the Secretary of the Interior (p. 19) and the Geological Survey (p. 636):

OIL SHALE.

And beyond these in point of time lie the vast deposits of oil shale which by a comparatively cheap refining process can be made to yield vastly more oil than has yet been found in pools or sands. The value of this oil shale will depend upon the cheapness of its reduction, and this must be greatly lessened by the value of by-products before it can compete with coal or the oil from wells. There is every reason to believe, however, that some day the production of oil from shale will be a great and a permanent industry. And the country could make no better immediate investment than to give a large appropriation for the development of an economical shale-reducing plant.

So conservative an authority as the Geological Survey estimates that the oil shales of the Western States alone contain many times over the quantity of oil that will be recovered from our oil wells. The retorting of oil

from oil shale has been a commercial industry for many years in Scotland and France; in fact, oil was obtained from oil shale here in the United States before the first oil well was drilled. The industry is in process of redevelopment to-day and if successful will assure us of a future supply, but at the best it will take years of time and a vast investment of capital to build up the industry to such a point that it can supply any considerable proportion of our needs. It is imperative, however, that the development of this latent resource be furthered and brought to a state of commercial development as soon as possible. . . .

Further field work on the oil shales of the Western States showed that certain areas not previously acted upon contain deposits of rich oil shale. As a result of these investigations, 56,221 acres in the Debeque district, Colo., were classified as mineral lands valuable as a source of petroleum and nitrogen, and 4,080 acres in the same region previously classified as oil-shale lands were found to have insufficient mineral value to warrant this classification and were accordingly reclassified as nonmineral lands. The classified oil-shale lands of Utah were also increased by the addition of an area in the Uinta Basin extending northward toward the Colorado State line from the area previously classified. Field evidence having shown these lands to be underlain by valuable oil-shale deposits, 69,120 acres were classified as mineral land. The total area of oil-shale land classified as mineral land, including areas previously classified, is 4,117,377 acres.

Exhibit C-99. July 8, 1919, Letter to A. J. Pitts, Financial Editor, Detroit Times, from Assistant Secretary of the Interior (pp. 1-3):

I have your letter of June 17, 1919, requesting information as to the investment value of leases of oil shale lands in Utah, Colorado and Wyoming.

As you are probably well aware, there are large areas of lands in the states named containing shales yielding petroleum and certain other minerals; and these shales

will in all probability be sooner or later developed. The development of this reserve supply of petroleum simply awaits the time when the price of gasoline or the demand for other distillation products of the shales warrants the utilization of this substitute source. From the best information I can get, it is an open question as yet as to whether petroleum products can be successfully produced from the shales in competition with the products from oil wells at present prices. Claim is made by some that with the most up-to-date processes and on a large scale, including the refining operations, it can be done at a fair profit, others are doubtful of it. All the plants in this country so far are more or less experimental in character. I have seen no reference by these to the cost of extracting and refining the products, and this omission makes the representations in their literature as to values greatly misleading.

With reference to the leasing of lands containing such deposits, there is no law under which leases can be obtained from the United States. One holding a valid unpatented claim under the mining laws is not prohibited by such laws from leasing his claim for its development. I am informed that large areas of the lands are now claimed under placer mining locations, but patents have not been applied for or granted.

Concluding, I might also call attention to the provisions of the mining laws with respect to claims held by location, which require that on a claim there must be labor performed by improvements made annually of not less than $100 in value, until patent issues, else the claim becomes subject to relocation, and as a consequence all the rights of the original locator may be forfeited and lost. While locations under the placer mining laws have been made of these lands, the question as to the applicability of such laws to deposits of oil shale has not been directly presented to the Department for decision, and consequently, an authoritative ruling on the matter has not been made. The general leasing bill now pending in Congress contains provision for leasing oil shale lands on terms designed to encourage their development. . . .

Exhibit C-410. July 22, 24, and 26, 1919, Hearings before the House Committee on Mines and Mining on H. J. Res. 150, "Joint Resolution To Suspend the Requirements of Annual Assessment Work on Mining Claims During the Year 1919 (pp. 16-17, 18):

Mr. TAYLOR. . . .

Now, gentlemen, in conclusion, if you report out the resolution at all you ought to, in my judgment, do two or three things: First, reduce the number of claims that can be exempt, and not allow any man or set of men to hold a large group of claims without developing or doing anything on them. Second, if you are going to pass this bill, I think you ought to include the oil-placer claims, and treat all of them alike. We have got more oil-shale placers in my State than in any other State in the Union. That is where the great oil-shale locations of this country are, not only in my State, but in my congressional district and in my own home county. I have got more oil shale in Garfield County in which I live than there is in 40 or 45 other States of the Union, all put together; and if you are going to let them go on with assessment work let my people go along with the rest of them. Third, if you decide to favorably recommend the bill with any limit as to the number of claims that anyone may hold without doing any work on them you ought to require every owner to pay into the county treasury $10 apiece for each claim that he claims exemption for.

Mr. KINKAID. Now, when it comes to oil shales, isn't it more important right there—that is, doesn't that emphasize the importance of restricting the number of claims or limiting the number of claims that may go without assessment work?

Mr. TAYLOR. Yes; I think there are some parties who have located and are holding hundreds of those oil-shale claims in my district and have never yet done any assessment work on them.

Mr. KINKAID. Isn't there some big concern that has got perhaps thousands of them?

Mr. TAYLOR. I don't know how many. I know of one corporation that is holding a very large number of mining claims, I think over 200.

Mr. BURKE. How many have you got in your district, developed and in operation at the present time, in Colorado?

Mr. TAYLOR. What kind of claims?

Mr. BURKE. Oil-mining placer claims.

Mr. TAYLOR. Not very many that are developed. Very few producers. As the gentleman said (Mr. Howard), they haven't yet discovered a satisfactory process of handling oil shale on a large scale that can compete with the flowing oil wells. That is something that will come after awhile, but they haven't gotten it developed yet.

Mr. TAYLOR. You know we have got an oil and coal leasing bill pending before the Committee on Public Lands. I am a member of that committee and we are going to report it out, I think, before a great while, and that limits the amount of oil-shale land that any one person can be interested in, directly or indirectly, to 5,600 acres. No corporation or stockholder can be interested in more than one such group of claims, aggregating 5,600 acres, and Dr. Manning, the Director of the Bureau of Mines, says that he thinks that a reasonable amount, because you have got to spend about $2,000,000 at least on a plant, and he and the Interior Department are willing to go that far to encourage development. We are going to provide for very liberal leases, but I don't think there will be very much opportunity for monopoly of large tracts, although there is a clause in the bill that if the owners fully comply with the law they have got the right to proceed to patent. . . .

Exhibit C-100. August 5, 1919, Letter to Representative James T. Begg from First Assistant Secretary of the Interior Vogelsang (p. 2):

. . . the general mining laws. These provide that an individual may locate 20 acres of mineral land upon the discovery of mineral, hold the claim by performing $100 worth of annual labor thereupon each year, and apply for and obtain a patent when he has expended $500 in development work, paying to the Government $2.50 per

acre for the land. Eight individuals may associate themselves together and include in a single location 160 acres of land.

The oil shale industry is practically untried in the United States and only development will prove whether or not it can be profitably conducted. There are extensive deposits of oil shale in the States named, as well as in some of the other western States.

I direct your attention to H. R. 560, now pending before the House of Representatives, which proposes to authorize the leasing of oil lands by the United States, section 20 of which deals particularly with oil shale.

Exhibit C-20. August 5, 1919, Congressional Record (p. 4279):

Mr. HENDERSON: Mr. President, I am prepared at this time to make a few brief comments on the work of the Bureau of Mines in regard to these experimentations. In view of what the Senator from Utah said the other day as to the scarcity of oil and the likelihood of a shortage within the probably not far-distant future, I had in mind the development of these extensive oil-shale fields in the West, from which I am sure in time we can secure a large amount of oil. However, in view of what the Senator from Utah has just told me—that he has in mind some appropriations for the purpose of carrying on such experimentations—I shall refrain at this time from commenting on that work, and will withdraw the amendment . . .

MR. WALSH of Montana. Mr. President, I rise to inquire of the chairman of the committee if I understand him aright as saying that no practical results have yet been secured from the experimentations for the purpose of devising an economical method of extracting oil from oil shale? . . .

Mr. WALSH of Montana. The Senator made some remarks the other day about the results of the experimentations for the purpose of extracting oil economically from oil shale. Did the Senator say that up to the present

time it had not been shown to be economically practicable?

Mr. SMOOT. Mr. President, I made that statement—that up to the present time there has been no system adopted by which oil could be profitably extracted from the American oil shale.

Mr. WALSH of Montana. The oil shales are an enormous reservoir of oil, are they not?

Mr. SMOOT. Oh, undoubtedly; and I stated to the Senate that in my opinion it would not be many years until a system would be discovered that would successfully extract the oil, and I look for a great production of oil to come from the great shale beds within the United States.

Exhibit G-580, 55-3. September 20, 1919, Letter from J. L. Lindland, Post Office Inspector, to J. E. Connelly, Special Agent, General Land Office, Denver, Colorado (p. 1):

I am in receipt of your letter of the 18th instand and was very glad to hear from you and that you are now making an investigation of the Western Oil and Shale Land Validating Company with a view to developing fully just what titles this concern, and associated concerns, might have in the lands in Colorado which they have been attempting to sell.

Exhibit C-102. April 20, 1920, Memorandum to the Secretary of the Interior, about the first oil shale patent applications, from the Commissioner of the General Land Office (p. 102):

We now have before us for consideration the first application for patent for oil shale claims, the same being Glenwood Springs 015847 by Verner Z. Reed and James Doyle for fourteen placer claims covering 2240 acres situated in the Naval Oil Shale Reserve No. 1 created by Executive Order of December 6, 1916.

On Departmental sanction, we have written many letters to inquiries stating that, thus far, neither the De-

partment nor any court, so far as we know, has ever held that oil shale lands and deposits are subject to the placer mining laws. It is understood that a very large portion of the oil shale lands in Colorado and Utah are covered by placer claims; some in good faith, probably more otherwise. In fact, we know of one large operation that seems to be entirely fraudulent, and we have heard of many others. Complaint even has been made that the stockmen are taking up these claims to hold the lands for grazing purposes.

The new leasing Act of February 25, 1920, provides for the leasing of oil shale deposits, and provides further (Sec. 21) "that any person having a valid claim to such minerals under existing laws on January 1, 1919" may transmute same into leases. Sec. 37 of the Act provides for the patenting of valid claims under preexisting laws.

Discovery is easy as to those claims that are located along the outcrops. There are doubtless many other claims back from the outcrops on which no discovery will appear. If we patent any oil shale placer claims, the leasing act will be a dead letter as to oil shale for some time. Note the language of Sec. 7 of the oil shale regulations under the leasing act, which were designed not to admit the existence of such a thing as a valid claim under the placer laws.

The matter is deemed of sufficient importance to ask for instructions. Submitted herewith is the report of a Special Agent and Mineral Examiner of this office on these locations, together with the record of the applications.

Exhibit C-103. Instructions, May 10, 1920, "Act of February 25, 1920—Oil Shale Placer Claims", 47 L.D. 548-551:

INSTRUCTIONS.

May 10, 1920.

ACT OF FEBRUARY 25, 1920—OIL SHALE PLACER CLAIMS.

Oil shale having been recognized by both the Department and Congress as a mineral deposit and a source

> of petroleum, and having been demonstrated elsewhere to be a material of economic importance, lands valuable on account thereof must be held to be subject to valid location and appropriation under the placer-mining laws to the same extent and subject to the same provisions and conditions as if valuable on account of oil or gas.

VOGELSANG, *First Assistant Secretary:*

The Department is in receipt of your [Commissioner of the General Land Office] memorandum dated April 20, 1920, stating that your office has before it for consideration the first application for patent for oil shale placer claims, the same being Glenwood Springs mineral entry 015847 by Verner Z. Reed and James Doyle for fourteen placer mining claims covering 2,240 acres now situate in Naval Oil Shale Reserve No. 1, created by Executive order of December 6, 1916.

You refer to the provisions of the leasing law of February 25, 1920 (41 Stat., 437), relating to oil shale deposits, and state that you deem the matter of sufficient importance to warrant its submission for instructions of the Department.

The entry in question was allowed February 25, 1919, for the La Paz Nos. 1 to 14, inclusive, placer mining claims, survey No. 19837, situate in what, if otherwise surveyed would be part of Secs. 14 to 20, inclusive, 22, and 23, T. 6 S., R. 95 W., 6th P. M., Parachute mining district, Glenwood Springs, Colorado, which claims purport to have been located November 14, 1912, on account of "petroleum and other mineral oils, oil shales, hydrocarbons and related materials," each by eight persons.

By section 2319 of the Revised Statutes it is provided that:

> All valuable mineral deposits in lands belonging to the United States, both surveyed and unsurveyed, are hereby declared to be free and open to exploration and purchase, and the lands in which they are found to occupation and purchase, by citizens of the United States and those who have declared their in-

> tention to become such, under regulations prescribed by law, and according to the local customs or rules of miners in the several mining districts, so far as the same are applicable and not inconsistent with the laws of the United States.

And by the act of February 11, 1897 (29 Stat., 526), it is provided:

> That any person authorized to enter lands under the mining laws of the United States may enter and obtain patent to lands containing petroleum or other mineral oils and chiefly valuable therefor, under the provisions of the laws relating to placer mineral claims.

Oil shale has long been recognized as a valuable mineral deposit and for many years the mining of such deposits and the distillation of petroleum and other mineral substances therefrom has been an extensive industry in Scotland, that has afforded employment to many people and produced large dividends. While there are no oil shale op :ations in the United States that have reached that point of commercial development or production, a reference to departmental publications indicates that there is great activity, particularly in the States of Colorado, Utah, Montana, Nevada, and California, looking to such development and production at places where there are large and easily accessible deposits of rich oil shale, and that some shale oil has been produced. It is reported that several small plants have been already completed, or are under construction, near DeBeque, Colorado, which is only a short distance from the land included in the entry of Reed and Doyle.

The Department has had numerous inquiries as to the locatability and patentability of such deposits under the mining laws and in response thereto, while disclaiming any intention of expressing a binding opinion in the premises, it has nevertheless declared itself as favorable to the view that such deposits, if valuable, are subject to location and purchase under the mining laws. In a letter dated May 16, 1916, addressed to Senator Myers the Department said that:

> * * * it would seem that a discovery by competent locators, locating in good faith, of oil shale, upon the unreserved, unappropriated and unwithdrawn public domain, capable, by approved methods, of yielding oil in sufficient quantities so as to make the land chiefly valuable therefor, would be a sufficient compliance with the provisions of said oil placer act of 1897, and that localities based upon such a discovery must be made and entered, if at all, under the provisions of said act of 1897.

In a letter dated December 26, 1917, addressed to Representative W. A. Ayers, it was said:

> Large areas of land in Colorado, Utah, and Wyoming have been classified by the Department as mineral land valuable for oil shale. The lands so classified, except two small areas, one each in Colorado and Utah which have been set aside as naval oil shale reserves, are open to mineral entry under the mining laws of the United States and to nonmineral entry in accordance with the provisions of the act of July 17, 1914, the shale deposits when entries are made under this act being reserved for separate acquisition under the mineral land laws.

In a letter dated April 11, 1918, addressed to Mr. Fred L. Morris, Lawrence, Kansas, it was said that:

> * * * if these deposits of oil shales are valuable they are now subject to location and entry under the mining laws by citizens of the United States.

And in a letter dated June 30, 1919, addressed to Mr. Hal P. Wilson, Detroit, Michigan, it was said:

> The lands included in Naval Oil Shale Reserve Colorado No. 1 and Utah No. 2 were withdrawn from appropriation and reserved for the United States Navy, and are not subject to location or the acquirement of any rights under the United States public-land laws while the withdrawal remains in force. If valid claims have been initiated prior to the withdrawal and have been maintained in accord-

ance with law, they are protected under the terms of the withdrawal act of June 25, 1910 (36 Stat., 847), but I am not advised as to whether any portions of the withdrawn lands are so held.

In the letter of the Director of the Geological Survey of May 23, 1916, addressed to you and advising you of the classification of certain areas, including that embraced in the said entry of Reed and Doyle, the Director said:

> The net result of oil shale investigations already made is that the oil-shale areas in Colorado, Utah, and Wyoming constitute a latent petroleum reserve whose possible yield is several times the estimated total remaining supply of petroleum in the United States.
>
> While the data at hand are not sufficient to warrant a specific statement as to the total recoverable nitrogen content of these shales, it is believed possible that this will prove so large as to give these deposits a value as a source of nitrogen equal to their value as a source of petroleum.
>
> In view of the high prospective mineral value of lands underlain by oil-shale deposits it is, of course, apparent that they should not be permitted to be acquired under the nonmineral land laws. The lands have not been recommended for withdrawal because the oil-shale industry is not yet developed in the United States, and is it is desired to give opportunity for the establishment of experimental plants, it is believed the lands should remain open for the present to acquisition under the mineral-land laws, even though they are ambiguous and but poorly adapted to deposits of this type.
>
> Accordingly, I hereby classify the tracts listed below as mineral lands, valuable as a source of petroleum and nitrogen, and request that you make the proper notation of the classification upon your records.

Such classifications of lands containing oil shale have been accepted by the Department as *prima facie* evidence

of the value of the lands so classified for mining purposes so as to acquire agricultural entrymen therefor to accept restricted patents to their claims under the provisions of the act of July 17, 1914 (38 Stat., 509), or assume the burden of establishing their nonmineral character.

In his letter of November 15, 1916, transmitting to the Department a proposed Executive order for the creation of Naval Oil Shale Reserve No. 1, Colorado No. 1, embracing approximately 45,400 acres, and including the land applied for by Reed and Doyle, the Director of the Geological Survey said: "The Colorado area is near transportation, and includes a part of the richest of the known shale deposits."

By section 37 of the leasing act of February 25, 1920, it was provided:

> That the deposits of * * * oil, oil shale, and gas herein referred to, in lands valuable for such minerals. * * * shall be subject to disposition only in the form and manner provided in this act, except as to valid claims existent at the date of the passage of this act and thereafter maintained in compliance with the laws under which initiated, which claims may be perfected under such laws, including discovery.

Oil shale having been thus recognized by the Department and by Congress as a mineral deposit and a source of petroleum, and having been demonstrated elsewhere to be a mineral of economic importance, lands valuable on account thereof must be held to have been subject to valid location and appropriation under the placer mining laws, to the same extent and subject to the same provisions and conditions as if valuable on account of oil or gas. Entries and applications for patent for oil shale placer claims will, therefore, be adjudicated by your office in accordance with the same legal provisions and with reference to the same requirements and limitations as are applicable to oil and gas placers.

The record of the entry accompanying your memorandum is returned for such adjudication.

Exhibit C-105. May 25, 1920, Memorandum for Division "N" from Commissioner, General Land Office (pp. 1-2, 4, 5):

November 11, 1918 Verner Z. Reed and James Doyle filed M. A. 015847 for the La Paz, Nos. 1 to 14, placer claims comprising 2240 acres described by metes and bounds, in T. 6 S., R. 95 W., 6th P. M., Glenwood Springs Land District, Colorado, upon which final certificate issued February 25, 1919. The lands are included within the limits of Naval Oil Shale Reserve No. 1, created by Executive Order of December 6, 1916. The lands were located for the development of oil shale deposits contained therein.

Under date of November 9, 1918 a report was submitted on this application by a special agent and a mineral examiner of this office. It is reported that the locators named in the location notice, dated November 14, 1912, namely, E. Tyler Smith, W. F. Schuyler, O. H. Shoup, James Doyle, C. A. Fisher, B. H. Hopkins, K. C. Schuyler and R. S. Hiltner, are men prominently associated with the oil business in Wyoming. Prior to the location of the group, the locators expended thousands of dollars in an examination and testing of these oil shales and getting reports on the methods of extraction as practiced in the oil shale regions of Scotland. On the strength of reports submitted by eminent geologists and chemists employed, the locations were made and the assessment work performed by the original locators for the years 1913 and 1914. The investigation indicates that each of the original locators had a real interest in the locations and believed in the prospective commercial value of these oil shales. . . . On May 10, 1920, the Department returned the entry record for adjudication, holding: . . . In view of this holding and instruction and the reports of the field men, showing discoveries and expenditures as required by the statutes, that the locations were made prior to the withdrawal by bona fide locators and were either perfected prior thereto or work was being prosecuted diligently to that end at the date of withdrawal, the case is clearlisted and closed as to

the Field Service Division and referred to Division "N" for action on the record.

/s/ [Illegible]
Commissioner.

Board of Law Review,

By /s/ [Illegible]

Exhibit C-106. August 5, 1920, Letter to Senator Lawrence C. Phipps from Secretary of the Interior John Barton Payne (p. 1):

Answering your inquiry as to whether decision by First Assistant Secretary in the case of the Reed Doyle oil shale placer mining claims has my approval, I have to advise you that the decision in question was prepared after careful study of the mining laws and decisions by the legal force of this Department, and in the unanimous opinion of that force was the only conclusion which could be reached under the law and the facts. No reasons have been presented to me which would warrant the view that the conclusion was incorrect.

Exhibit G-522. March 2, 1921, Letter to G. H. McCormigh, Lovelock, Nevada, from First Assistant Secretary of the Interior Vogelsang (p. 1):

. . . In the opinion of the Department . . . with respect to oil shale, a discovery would mean that uncovering or exposure of a deposit of oil shale in sufficient quantity and of sufficient value to warrant a person of ordinary prudence in the development and exploitation of the property for the purpose of producing oil and other by-products from the shales. . . .

Exhibit C-211. April 25, 1921, Supplemental Report to Commissioner, General Land Office, from Mineral Examiner Oral J. Berry (p. 1):

This supplemental report is attached to furnish your office further information relative to Dr. R. D. George.

Dr. R. D. George has been State Geologist of Colorado for several years and is one of the best posted men in the state with regards to the mineral resources and a recognized authority on oil shale. A report from Dr. R. D. George can be relied on. . . .

Exhibit C-311-L. April 21, 1926, Report to Commissioner, General Land Office, on the Mountain Boy claims, from Inspector G. M. Kintz (pp. 1, 42):

APPROVED

/s/ Ralph S. Kelley
Division Inspector
4/1/27

. . . .

With regard to Mountain Boy Nos. 6 and 7, there appears to have been made a good discovery of minerals. . . .

Exhibit C-349. March 7, 1927, Letter to Secretary of the Interior from Commissioner, General Land Office (pp. 1-25):

It appears that practically all the oil shale area in Colorado is covered by mining locations made prior to the passage of the leasing act of February 25, 1920 (41 Stat., 437). For several years examination of such locations has been conducted in the field regardless of whether applications for patent had been filed or not, in order to ascertain their validity. Many reports of such investigations have been received indicating that many of the locations have no validity but in certain instances effort is being made to hold possession of the lands under the mining laws. In a number of the cases it is reported that little or no effort is being made at present to prop-

erly maintain the claims by the performance of the required assessment work. Of course, unless the claims are shown to be valid and that the requirements of the mining laws have been met, the lands involved would be released therefrom and be subject only to the provisions of the leasing act. Is is probably because of this situation that most of the locators will endeavor to maintain their claims under the mining laws in order to eventually get a patent therefor.

The question of the advisability of examining all oil shale locations in the field where no application for patent has been made nor any complaint filed against the same or where no application for lease or otherwise for the land has been filed has arisen. . . .

The situation is called to your attention with the request that instructions be given by you as to the examination of the claims mentioned and as to the procedure that may be properly followed to declare the claims invalid if the evidence so warrants.

Exhibit C-350. May 31, 1927, Letter of Instructions to Commissioner, General Land Office, from First Assistant Secretary of the Interior E. C. Finney (pp. 1-2):

I have your request for instructions in the matter of oil shale claims (March 7, 1927, A. — C.A.O.)

After careful consideration, it is the judgment of the Department that all oil shale location of record should be examined and reported upon by inspectors of this Department. The Navy has requested that this be done with respect to all locations within the exterior limits of the naval oil shale reserves.

On the unreserved public domain it seems advisable that this course be pursued for numerous reasons. The Department believes that *bona fide* claims, regularly located and maintained in accordance with law, should be protected and be allowed to proceed pursuant to the provisions of the law under which initiated, and section 37 of the leasing act. Paper locations and locations not maintained as required by law constitute a cloud upon the public lands and interfere with their proper use and

disposition. Moreover, as time goes on, it may be more and more difficult to ascertain and establish the fact surrounding locations and the work performed by the locators and their successors in interest, or failure to perform work as required by law.

It seems important, therefore that the examination be made as soon as practicable and the facts ascertained be made of record and available to the Department through the inspectors' reports.

It is therefore directed that the division inspector be instructed to proceed to examine and submit reports upon all claims of record within the area described. Where the reports are adverse and proseedings against the locations are contemplated, the propriety of proceeding immediately, or waiting until an application for patent has been filed, or the protest submitted, may then be considered and further instructions asked for and received from the Department.

In order to expedite this work, both in the interest of *bona fide* claims, and in the interest of the Government as to claims not valid, an effort will be made to give the division inspector additional assistance for field work in the near future.

Freeman v. *Summers, United States, Intervener (On Rehearing)*, 52 L.D. 201 (1927):

FREEMAN v. SUMMERS, UNITED STATES, INTERVENER (ON REHEARING)

STANDARD SHALES PRODUCTS COMPANY v. SUMMERS, UNITED STATES, INTERVENER (ON REHEARING)

Decided September 30, 1927

MINING CLAIMS—MINERAL LANDS—OIL-SHALE LANDS—DISCOVERY.

The discovery of an isolated bit of mineral, not connected with or leading to substantial prospective

values, is not a sufficient discovery to validate a location under the mining laws, but it is sufficient if mineral is found in a mass so located that the vein or mineral-bearing body can be followed with reasonable hope and assurance that a paying mine can be ultimately developed.

MINING CLAIM—MINERAL LANDS—OIL-SHALE LANDS—DISCOVERY—EVIDENCE.

Where there has been an actual discovery of mineral either on the surface or in shallow workings within the limits of an asserted mining location, and the deposits of the region have been the subject of exploration and study for a number of years, evidence bearing upon the mineral value and the geological formation of the adjacent lands may be considered in determining whether the located lands are chiefly valuable for their mineral contents.

MINING CLAIM—MINERAL LANDS—OIL-SHALE LANDS—DISCOVERY—PATENT.

It is not necessary, in order to constitute a valid discovery under the general mining laws sufficient to support an application for patent, that the mineral in its present situation can be immediately disposed of at a profit.

OIL-SHALE LANDS—MINING CLAIM—MINERAL LANDS—DISCOVERY—GEOLOGICAL SURVEY—EVIDENCE

The rule as to the thickness and oil content adopted by the Geological Survey in its regulations of April 3, 1916, for the classification of lands with respect to their oil-shale character, was not intended to be applied by the department as a yardstick in determining whether the physical exposure of an oil-shale deposit within the limits of an asserted oil shale placer mining location is sufficient to constitute an adequate discovery of mineral under the mining laws, but each case presented must be determined upon the facts there disclosed.

WORK, *Secretary:*

On May 10, 1920, George L. Summers made application 018825 for enlarged homestead entry covering S. ½ N.W. ¼, N. ½ SW. ¼ Sec. 1, and S. ½ NE. ¼, N. ½ SE. ¼ Sec. 2, T. 5 S., R. 97 W., Glenwood Springs land district. On the same day he made application 018827 for additional stock-raising entry covering lots 3, 4 S. ½ NW. ¼ Sec. 2, and lots 1, 2, 3, SE. ¼ Sec. 3, in the same township and range. Application 018825 was allowed May 17, 1920, with mineral reservation, and application 018827 on January 28, 1921. Combined final proof was submitted May 22, 1923. A protest against the enlarged entry was filed by the Standard Shales Products Company alleging a superior right to the tracts in Sec. 1 by virtue of the ownership and possession of the Triumph No. 22 and Triumph No. 23 placer mining claims initiated by location April 5, 1918. A like protest was filed against the entry of the remaining lands by J. D. Freeman based upon alleged ownership and possession of the F. D. No. 7 and J. D. Nos. 1, 2, 3, and 5 placer mining claims initiated by location April 1, 1918, and covering the remaining tracts in Summer's entries. By decision of December 20, 1924, these protests were dismissed and the mining claims held to be null upon the grounds that on February 25, 1920, the date of the approval of the leasing law, no discovery of a valuable deposit of oil shale had been made upon any of these claims as alleged, nor was there at that date diligent prosecution of work leading to discovery. These decisions were affirmed on motion for rehearing and retrial May 23, 1925.

The contestants thereafter filed a petition for the exercise of supervisory authority.

By decisions of July 29, 1925, the department favorably entertained the petitions and authorized further hearing at the local land office between the parties, the Government, represented by inspectors, being allowed to intervene. The record made at said hearing, with briefs and arguments of the parties, has been given extended considerations.

The contestants advance the proposition that the Green River formation, at least an area thereof bounded by

Green River on the east, the Colorado River on the south, Brush Creek on the west, and Piceance Creek or White River Divide on the north, and within which boundaries these claims are located, is one massive homogeneous deposit of like mineral, easily identifiable by fossil insects; that it is one stratum, one bed, from its base to its topmost reaches, a vertical distance of from 2,700 to 2,800 feet; that all sections of a stratigraphic column of this formation contain either shale, sandy shale, shale sand, or sand that will yield oil upon destructive distillation; that in the light of latest information and engineering research and opinion the feasible method of mining will involve and dictate the mining of all the shale from the base of a rich bed, known as mahogany bed, to the exposures of shale upon the land; that the various deposits of sandstone upon the land in question are but thin partings, which have some oil content; that the whole body, therefore, will be commercially developed and is all valuable, and discovery of any oil shale upon the land, being a part of the integral mass that lies below it, is a sufficient discovery to satisfy the requirements of law.

Before proceeding with further discussion of the matter, reference is made to certain regulations of the Geological Survey relating to the classification of oil-shale land quoted in previous decisions of this department, to the effect that where shale beds are too deep to be mined by open-cut methods, such lands must contain shale capable of yielding 1,500 barrels of oil per acre in beds not less than 1 foot thick, yielding 15 gallons per ton, and within a reasonable depth below the surface. Second, that where the shale beds are sufficiently near the surface to be mined by open-cut methods, the lands must contain shale sufficient to yield 750 barrels of oil per acre in beds not less than 6 inches thick, and yield not less than 15 gallons per ton.

The impression appears to have become general that these regulations were to be used as a yardstick, with which the department would determine in all cases whether sufficient discovery to warrant the issuance of patent therefor under the mining laws had been made. An endeavor to correct this impression was made in a

subsequent communication relative to the rehearing in this case, and later by a letter signed by the Secretary of the Interior, explaining that such was not the purpose of the department, and that each case presented must be determined upon the facts there disclosed.

Section 2320 of the United States Revised Statutes provides that—

> No location of a mining claim shall be made until the discovery of a vein or lode within the limits of the claim located.

Section 2329, with reference to placer claims, in which category oil-shale beds fall, provides that placer claims shall be subject to entry and patent—

> under like circumstances and conditions or upon similar proceedings as are provided for vein or lode claims.

It is a statutory requirement, therefore, that no location of a placer mining claim shall be made until the discovery of minerals within the limits of the claim located.

The general rule of the department as to what constitutes a sufficient discovery within the limits of a lode mining claim was laid down in the case of *Costle* v. *Womble* (19 L.D. 455, 457), and has since been followed.

> * * * It is my opinion that where minerals have been found and the evidence is of such character that a person of ordinary prudence would be justified in the further expenditure of his labor and means, with a reasonable prospect of success in developing a valuable mine, the requirements of the statute have been met.

In *Kern Oil Company* v. *Clotfelter* (30 L. D. 583, 587) the department held:

> * * * The evidence bearing upon the mineral character of the land selected should not be restricted to mineral discoveries or developments upon these lands and to their geological formation, but may extend to the discovery and development of mineral on adjacent lands and to their geological formation.

See, also, in this connection *Jefferson-Montana Copper Mines Company* (41 L. D. 320).

In the *Oregon Basin Oil and Gas Company case* (50 L. D. 244; 258) the department denied an application for placer patent for lands alleged to contain valuable deposits of oil and gas, on the ground of failure to show sufficient discovery. Slight discoveries of gas or oil had been made in shallow wells in shale or sand near the surface, and it was contended that this warranted a prudent man in going further with a reasonable expectation of finding valuable oil deposits at depth. The department concluded in that case that the showing presented (p. 252)—

> fails to satisfactorily establish that in either of the wells drilled on the claim there was encountered any formation carrying oil or other mineral in sufficient quantity to impress the land with any value on account thereof, while, on the other hand it is conclusively made to appear that the formations from which oil values are expected to be developed within the limits of the claim exist many hundred feet below, and are wholly unconnected with, the formations penetrated in said wells.

From the foregoing it follows that the law requires as a prerequisite to a valid location that mineral be discovered within the limits of the claim located; that the mineral indications shall be such as to warrant a prudent man in the further expenditure of time and money, with a reasonable prospect of success. In order to warrant that proceeding, he must have discovered mineral in such situation and such formation that he can follow the vein or the deposit to depth, with a reasonable assurance that paying minerals will be found. In other words, the discovery of an isolated bit of mineral, not connected with or leading to substantial prospective values, is not a sufficient discovery; but a mining locator is not expected to find at the surface or in a shallow working a body of mineral which can be immediately mined and reduced at a profit. It is sufficient, as already stated, if he finds mineral in a mass so located that he

can follow the vein or the mineral-bearing body, with reasonable hope and assurance that he will ultimately develop a paying mine.

In this case it appears from the evidence submitted at the original hearing and rehearing that actual discoveries of mineral were made either on the surface or in shallow workings. The existence of oil shales in northwestern Colorado is a matter of common knowledge, and the deposits have been the subject of exploration and study for a number of years.

In 1923 the Geological Survey of this department published Bulletin No. 729, relative to the oil shales of the Rocky Mountain region. It was stated on page 21 of this bulletin—

> By far the most extensive and rich oil shales of the United States, and perhaps of the world beyond to the Green River formation of Colorado, Utah, and Wyoming.

On page 36 it is stated—

> The youngest sedimentary rock in the Piceance Basin belong to the Green River formation, which also carries most of the oil shales. * * * The Green River formation is the surface rock over the entire interior part of the Piceance Creek Basin. * * * Interbedded with the rich oil shale are beds of lean and almost barren shale and sandstone of varying thickness.

On the same page it is stated—

> The presence or absence of rich oil yielding shales permits a division of the Green River formation into three members * * * The upper member is composed largely of soft shales with some sandstone, and includes but few beds of rich oil yielding shales. The middle member almost everywhere along its outcrop includes beds of rich oil shales which in some places have a great aggregate thickness, and which are everywhere extremely presistant and stand out in relief.

There have been filed with the department photographs and other exhibits, descriptive of this Green River forma-

tion, and which support the allegations of contestants as to its presence in the immediate area in which these particular claims are located.

The oil-shale deposits of the United States have, as heretofore stated, been well known for a number of years, and have been the subject of much exploration, study, and investigation. They have been recognized by the department and by Congress as a very valuable natural mineral resource. They have been the subject of treatment in a large number of experimental reduction plants, one of which was provided for by Congress and is now in operation.

While at the present time there has been no considerable production of oil from shales, due to the fact that abundant quantities of oil have been produced more cheaply from wells, there is no possible doubt of its value and of the fact that it constitutes an enormously valuable resource for future use by the American people.

It is not necessary, in order to constitute a valid discovery under the general mining laws sufficient to support an application for patent, that the mineral in its present situation can be immediately disposed of at a profit. As stated by the department in the case of *Narver* v. *Eastman* (34 L. D. 123, 125)—

> * * * It does not follow that because there is no clear profit arising from the sale of an article that has been manufactured or produced that it therefore has no commercial value. Take for example the farmer. In the course of husbandry it frequently happens that different crops raised by the farmer when put in market do not sell for enough to pay the costs of their production and transportation, but can it be truly said that said crops have no commercial value simply because after the same have been sold and all expenses incident to their production and shipment deducted, there is no clear gain to the farmer, and therefore, as a corollary, that the lands are not valuable for agricultural purposes? And the same may be said as to the entry under this act of land valuable "chiefly for stone." Could not the land be valuable chiefly for stone even though, because

of its remoteness from market or other causes, the stone could not then be sold for a remunerative price?

The evidence in this case shows that in this particular area of Colorado the lands contain the Green River formation, and that this formation carries oil shales in large and valuable quantities; that while the beds vary in the richness of their content, the formation is one upon which the miner may rely as carrying oil shale which, while yielding at places comparatively small quantities of oil, in other places yields larger and richer quantities of this valuable mineral.

In other words, having made his initial discovery at or near the surface, he may with assurance follow the formation through the lean to the richer beds.

There can be no question whatever as to the greater value of the lands for their oil-shale deposits than for other purposes. Their agricultural value is negligible; their value for grazing purposes is nominal, and the real and principal value is the mineral deposit.

After careful consideration of the entire record the department has reached the conclusion that the locations are valid and, if otherwise regular, are entitled to pass to patent under the general mining laws. Prior departmental decisions in this case are accordingly recalled and vacated, the decision of the Commissioner of the General Land Office affirmed, and the homestead entries 018825 and 018827 of George L. Summers held for cancellation, because made upon lands covered by prior valid mineral locations.

Motion sustained.

Exhibit C-274. Annual Report of the Secretary of the Interior for the Fiscal Year Ending June 30, 1927 (pp. 29-30):

OIL SHALE

One of the important subjects before the department during the year was that of oil shales, immense areas of which exist in Colorado, Utah, and Wyoming. Prior

to February 25, 1920, these deposits were held to be subject to location and entry under the placer mining laws. On that date Congress passed the general leasing act, which repealed the placer mining laws as applicable to such deposits, and provided that thereafter they would be subject to disposition only through lease. One of the concluding sections of the act, however, provided "that valid claims existent at date of passage of this act, and thereafter maintained in compliance with the laws under which initiated" might be perfected under the prior existing laws. Those prior laws required the claims to be located, a valuable deposit of mineral discovered, that not less than $100 worth of labor or improvements be placed upon the claims each year, and that as a prerequisite to patent not less than $500 should have been expended upon or for the development of each location.

Immediately prior to the enactment of the leasing act, numerous locations were made upon the shale areas under the placer mining laws, and many of these locations have been followed by applications for patent. It became the duty of the department to consider these claims and to determine whether the locators had complied with the requirements of the general mining laws. A public hearing, attended by many people interested, was held in the department on December 1, 1926, and the subject was thoroughly discussed. Following this hearing, after extended consideration by the department, decision was rendered in the case of Freeman et al. v. Summers, involving, primarily, the question of what constitutes sufficiency of discovery upon certain shale placer mining claims. The department applied the long-established rule that when the locator had discovered mineral within the limits of his claim in a situation and formation that the vein or deposit could be followed to depth, with reasonable assurance that paying minerals will be found, such discovery may form the basis of a patent, where compliance with the law has been had in other respects.

Field investigation is being made of all shale claims, to the end that valid rights may be protected and permitted to be perfected, but that invalid claims, where compliance with the laws has not been had, may be

eliminated and canceled. Many difficult questions of law and of fact necessarily arise in these cases, and while general rules of law may be applied, the facts of each case, as disclosed by investigation and evidence, must govern the department in the disposition of the cases.

Exhibit C-351. May 7, 1930, Memorandum for the Secretary of the Interior from Commissioner, General Land Office (pp. 1-2):

> After the leasing law was enacted, the matter of disposing of the oil shale deposits and the lands containing the same, presented a situation that required close study. It was decided that the claims should be investigated in the field for the purpose of determining whether or not they were bona fide claims existing at the date of the act, and also whether they had been maintained in accordance with the mining laws. These investigators have since been carried on and charges preferred against such locations as were reported to be invalid for any cause, such as, lack of discovery, dummy locators and failure to perform annual assessment work, and where applications have been filed failure to perform the required patent expenditures. . . .
>
> With a view to expediting final action in these oil shale cases for the protection of the interests of all concerned, the Commissioner of the General Land Office has recently augmented the field force assigned to this work and in addition thereto has enlisted the cooperation of the surveying service. . . .

Exhibit C-321. Report of the Assistant Attorney General [Seth Richardson] in Charge of the Examination in to the Charges of Ralph S. Kelley Respecting the Administration of Oil Shale Lands, as Submitted to the Attorney General on October 24, 1930 (pp. 48, 165-167):

It may be fairly said that the decision of the Secretary of the Interior in the Freeman-Summers case is with its surrounding developments, the high spot of Kelley's attack upon the Department of the Interior. . . .

Having in mind the charge that the present administration has been letting down the bars in favor of oil companies and oil shale claimants, I beg to call attention, in closing, to one additional significant circumstance.

When the Supreme Court in the Krushnic case held, in effect, that where a claimant had failed to perform yearly assessment work but had recommended his assessment work before challenge by the government or anyone else, his previous failure to perform such work was cured, and was no longer the basis for an attack upon his ultimate right to patent,—such decision smashed a long existing Executive interpretation of the law on the part of the Interior Department. It was a stunning defeat for the government, and not a victory, as Kelley claims. As soon as this decision was rendered the Interior Department endeavored to save as much as possible from the wreck, and although Kelley now charges that the Interior Department at that very time was "paralyzing the Field Service" by friendly rulings in favor of oil companies, the unbiased record presents the encouraging spectacle of *the most extraordinary effort* being initiated on the part of the Interior Department, under the directions of Secretary Wilbur and his subordinates, to take advantage of the one loophold left in the Supreme Court's opinion, that if the failure to do assessment work was *actually challenged* by the government *before* work was recommended, the Department might still maintain an attack upon the claim. To effectuate this salvage, so-called, Secretary Wilbur put into the Field every available man and directed Kelley to proceed to post every claim in connection with which there was any idea of a contest against the claim by the government; and the Department and Kelley cooperated to the utmost extent in carrying on this work,—a work which, it is at once apparent, Secretary Wilbur and the Department would not at all have been interested in *if their hearts had been with the oil companies and against the government.* It furnishes a final, up-to-date illustration of the correctness of the conclusion which presents itself to me, in closing, that the oil shale lands of the

United States are being vigorously and honestly administered by Secretary Wilbur and his Department.

Exhibit C-407. November 6, 1930, Letter to Rep. Dan B. Colton, Chairman, House Committee on Public Lands from Secretary of the Interior Ray Lyman Wilbur (pp. 1, 4-5):

Prior to February 20, 1920, unreserved public lands of the United States containing deposits of oil shale were subject to location, application, and entry under the provisions of the general mining laws and particularly those sections covering placer mining claims. See Instructions of First Assistant Secretary Volelsang, May 10, 1920 (47 L.D. 549)....

The specific question as to assessment work discussed above is, of course, only part of the general problem as to oil shale lands and it may be that other phases of it now covered by legislation, such as the questions of discovery . . . will impress you as requiring legislative definition.

Exhibit C-320. Consolidated Hearings before the House Committee on Public Lands, 71st Cong., Second and Third Sessions, "*Applications for Patent on Oil-Shale Lands*", 1930-1931 (pp. 36-37, 99, 121-123, 170, 181):

Mr. POTTER. That statement presents the matter exactly as I would state it myself. That is exactly the situation in Colorado. Now, the thing that I would like to say to you gentlemen is this: This is not the first time I have been before this committee in connection with shale. I personally attended a meeting of the Public Lands Committee of the House on February 26, 1918, and we came before the committee on that day because a few days before we had had a hearing before First Assistant Secretary Vogelsang of the Interior Department. A question had been raised by the department as to whether shale lands were subject to location under the placer mining law, and we were very anxious to know

about it. Many of us had made locations, in fact many people all over Colorado and Utah had done so, and the question was whether these locations would be recognized at all. The leasing bill was being considered and we thought at that time it would probably be acted upon favorably very shortly, so we came down here. Mass meetings were held over in the western part of the State and the people declared that they were entitled to liberty or death, and they sent representatives down here to tell somebody about it. I did not happen to belong to any of those groups. However, we did have a meeting in Denver, and a number of attorneys and engineers came down here to be heard before the Secretary as to the character of these claims and as to whether they were properly subject to location under the leasing law, or under the mining law, as were oil claims. At my request Dr. R. D. George, our State geologist, and Mr. Arthur L. Pierce, quite an eminent mining engineer from New York, appeared at the hearing to explain the character of the land and its possible production, in order to show that it was subject to the same appropriation as oil land. While we were quite anxious to have these lands recognized as being subject to location under the placer mining law, I was personally more interested in the attitude of the department toward our efforts to develop these shales. That was the main thing. The employment of these different engineers and the expenses of having them here cost me about a thousand dollars. The following men from the department were present at the hearing: Judge E. C. Finney, chief law officer of the Land Department; Dr. George Otis Smith, Director of the Geological Survey; Dr. Van H. Manning, Director of the Bureau of Mines; and Mr. Clay Tallman, Commissioner of the General Land Office. There were also present a number of technologists from the department.

The statement that I made to these gentlemen that morning was that I had been a pioneer all my life. My people took me to Kansas when I was 5 years old and when they still had buffalo out there and we lived in dugouts and sod houses, and the grasshoppers ate up our crops and the hot winds destroyed them until it took

40 years for a homestead to be developed so that people could make a living on it, and I stated that the only reason I was out in Colorado doing anything with these oil-shale lands was because I had been a pioneer all my life and did not have sense enough to do anything else. I did want to know one thing at that time: I wanted to know what policy the department would pursue with reference to oil-shale locations. If it was the policy of the department to oppose such locations, notwithstanding the fact that we made quite a number of locations and had expended considerable sums of money, if they would say frankly that they were going to oppose those locations, I would go back home and abandon every claim we had located and attempt to repay every dollar my friends had put into the enterprise and give up being a pioneer. That was the way I put the proposition up to the Secretary. This may not be of interest to you, but it was of great interest to me at that time, and both Mr. Finney and Mr. Vogelsang assured me that they had a very friendly interest in the development of the shale after we had made the showing of what could be done, and had shown them that only a limited amount of this ground would be appropriated, and that if we were allowed to hold these locations under the general mining law, private enterprise would blaze the trail, pave the way, and make it possible for the Government to develop the remaining shale lands under the leasing law.

Mr. EATON. Was that before or after they had made the naval oil shale reserve over in that territory?

Mr. POTTER. About the same time. I don't know just whether it was before or after. It may have been before. This was in February 1918. Of course, the records will show when the naval oil shale reserve was established. After discussing this matter quite at length, and after a very good showing of the scientific aspects of the oil shale which was a new subject to most people at that time, they agreed with us that it would be well if this small percentage were allowed to be located under the old mining law. We figured that in Colorado some place

between 10 and 15 per cent of the oil shales would be appropriated, and that would leave the remainder of this land subject to be operated under lease, that a way would be found so that when it was necessary to take the oils from the shales it could be done. They were so much impressed with this showing that they asked us to come before your committee. We had not, up to that time, had any notion of coming before the Public Lands Committee. Mr. Finney sat down with Mr. John H. Fry, an attorney from Denver, and myself, and aided us in the preparation of a clause that would except these claims from the operation of the leasing law. We had the assurance of every cooperation from the department, so far as this small amount of shale land which we were locating was concerned . . .

The CHAIRMAN. The point in my mind was along that line. As you know, the oil shale covers vast areas, usually outcroppings in canyons and mountain sides, and the question is whether the $100 worth of work is really needed towards making a discovery.

Secretary WILBUR. Of course, that is, under the law, an evidence of intent, serious intent of continuous work to develop the claim. As a matter of fact, as you say, many of these claims could be discovered with a spy glass, using the ordinary expression. . . .

Mr. SWING. Does the law still operate with reference to a man discovering some new oil shale?

Secretary WILBUR. That would come under the leasing act.

The CHAIRMAN. Oil shale, as I understand it, is now subject to entry under the leasing act, and this legislation only affects those claims that were initiated prior to the passage of the act. . . .

In that connection I have a letter from Mr. D. D. Potter, who has been conspicuous in his advocacy of some of these changes, and in the litigation which has been referred to. He then sets forth his views regarding some of these bills which, with the permission of the committee, I will simply offer. . . .

OCTOBER 20, 1930.

Hon. CHARLES S. THOMAS,
Washington, D.C.

MY DEAR SENATOR THOMAS: I trust that you have reached Washington without serious inconvenience, and that you and Mrs. Thomas are not unduly weary from the long journey.

I am very sorry indeed that I can not be with you since I have thought it might be well to devote a small part of the time at the hearing before the Secretary in acquainting him with some of the historical aspects of the efforts made by Colorado citizens to develop the oil shales.

So far as I am advised the earliest locations of the oil shales under the placer mining law occurred in 1915, and nearly all of the locations made were made in 1917 and 1918. There was a reason for this. The World War was in progress, and while the United States was not yet involved, it was anticipated that we were quite likely to be involved and become associated with the allies against Germany. War materials were in demand and the United States at that time was doing a thriving business in the sale of war supplies to Europe.

In 1913 the Geological Survey sent E. G. Woodruff to Colorado, Utah, and Wyoming to make a reconnaissance survey of the oil shales. E. G. Woodruff and David T. Day published a report on these oil shales in 1914—Bulletin 581A. The activities of Woodruff together with the publication of this bulletin, aroused a lively interest in the oil shales, and when, later, Dean E. Winchester was sent into the field to classify the oil shales, and published a more exhaustive report, the interest became intense. This was followed later by enthusiastic speeches on oil shale by David T. Day in Denver and other places in the West.

In 1917 the United States entered the World War, and the United States Geological Survey, through the State Geological Survey, and otherwise urged the development and production of raw materials necessary to carry on the war.

In 1917 Prof. Russell D. George became very active in the patriotic work of urging citizens of the State of Colorado to develop and produce minerals and oil essential to the successful prosecution of the war. Verner Z. Reed and James Doyle were among the early locators of oil shale and when they applied for patent in 1917 the question was raised as to whether oil shale was subject to location under the placer mining law.

Many locations of oil shale having been made by citizens of Colorado, Utah, and Wyoming, this question created anxiety among the people interested in their locations. Applicants from Colorado asked for a hearing before the Secretary of the Interior and were heard about the 24th or 25th of February, 1918. Assistant Secretary Vogelsang presided at this hearing, and there were present, besides Mr. Vogelsang, Judge E. C. Finney; Dr. George Otis Smith, Director of the Geological Survey; Dr. Van H. Manning, Director of the Bureau of Mines; and Mr. Clay Tallman, Commissioner of the General Land Office. A number of Senators and Representatives from Colorado, Utah, and Wyoming were in attendance at this hearing.

After the hearing the gentlemen above named, representing the Government, urged that the same information which had been given at the hearing before the Secretary should be given to the Public Lands Committee of the Senate and the Public Lands Committee of the House. A hearing was had before the Public Lands Committee of the House on February 26, 1918. A complete record of this hearing appears in the Congressional Record of that date.

After the hearing before the Public Lands Committee of the House the gentlemen who appeared before the Secretary and before the Public Lands Committee of the House were advised that it would be unnecessary to make a further record before the Public Lands Committee of the Senate. These representatives of the oil-shale men of Colorado were advised that the department would cooperate to the end that the oil-shale lands already located under the placer mining law should be

excepted from the operation of the oil leasing law, which was pending before Congress at that time.

The price of crude oil was advancing. The prices which have obtained since 1916 are set forth in the following schedule:

Year	Average price per barrel	Year	Average price per barrel
1916	$1.26	1923	$1.56
1917	1.81	1924	1.64
1918	2.20	1925	1.87
1919	2.29	1926	2.13
1920	3.42	1927	1.38
1921	1.65	1928	1.31
1922	1.68	1929	1.365

Consumption was increasing at a much more rapid rate than it was possible to produce the oil from the ground. An intense drilling campaign was undertaken, but the increase in production did not keep pace with the increase in consumption. The Geological Survey and well-known geologists, including Ralph Arnold and Mr. M. L. Requa, United States oil administrator, freely prophesied the exhaustion of the supply of oil from wells at a comparatively early date.

You will note that the price of oil continued to mount until 1920, when the price reached $3.12 per barrel.

Locations of the oil-shale lands were perfected by patriotic citizens of Colorado, Utah, and Wyoming. A great deal of technical work was undertaken, and the titles to these lands were protected by the performance of annual labor. The oil shale claimant having expended large sums of money in the development of the oil shales sought to interest capital in the production of oil from their shales. A few of the large oil concerns were interested, but not for years after the shale claimants had undertaken the development of this industry.

About six years ago the attitude of the department became antagonistic. Oil-shale claimants, without exception, were charged with bad faith, and it became next to impossible to interest capital in this enterprise because of the attitude of the Government.

Small groups of independent investors were interested in the shales, and small companies were organized for the purpose of providing the funds necessary to patent the lands and develop the oil shale industry. Notably among these small companies is the Standard Shale Products of Lodi, Calif. Mr. Wilson H. Thompson, the president of the First National Bank of Lodi, was the president of this company. His company expended about $180,000, but by reason of bad conditions obtaining in the grape-growing districts of California, his people became discouraged, and when they found themselves opposed by the Government in the case of George L. Summers, v. J. D. Freeman and the Standard Shale Products Co., it was almost impossible to secure the necessary money to defend this litigation and to protect their titles. These people had undertaken the development of this oil shale property in the best of faith and believing it was possible to establish a profitable oil industry. Hundreds and thousands of dollars were expended in an effort to develop these oil shale lands and to establish a profitable industry, following every encouragement offered to them in the beginning by the representatives of the Government. Later, these same men were charged with bad faith by the field department and every obstacle was put in their way, with the apparent purpose of preventing them from perfecting their titles or regaining the money invested in the development of these properties. These properties were all located under the general mining law prior to the enactment of the oil leasing law. . . .

Mr. CONSAUL. There is nothing suggested in this proposed legislation which would do away at all with the subject of discovery.

Mr. LEAVITT. That should be very carefully avoided.

Mr. CONSAUL. In other words, Mr. Leavitt, I take it that you mean that any phrasing of that thought should not make it the sole test for patent?

Mr. LEAVITT. Yes. Otherwise the payment of five of those might be taken to mean sufficient ground for the issuing of patent, regardless of whether there had been discovery. If the discovery does not require the $500 worth of work actually on the ground, possibly the pay-

ment might take the place of that, but if there had not been a discovery, the mere payment of the $500 in annual payments surely should not be made the basis for issuing a patent to a claimant, if there has been no proof that it was oil-shale land.

Mr. CONSAUL. This thought is just suggested, that that $100 payment be credited as part of the patent work. That would have reference solely to the question of work as distinguished from discovery.

The CHAIRMAN. But there should be a proviso that patent shall not issue until discovery shall have been made.

Mr. CONSAUL. That is part of the general mining law, but if this be considered a special codification, it might be well to include that.

. . . .

The specific question as to the assessment work discussed above is, of course, only part of the general problem as to the oil shale lands and it may be that other phases of it not now covered by legislation, such as the questions of discovery and character of proof required on the issue of "bona fides" of a locator, will impress you as requiring legislative definition.

Very truly yours,

RAY LYMAN WILBUR.

The following is the letter of the Secretary of the Interior, of February 6, 1931:

DEPARTMENT OF THE INTERIOR,
Washington, February 6, 1931.

Hon. W. R. EATON,
House of Representatives.

MY DEAR MR. EATON: Referring to your informal request, the following is the latest approximate information relative to oil shale lands:

1. The areas classified by the Geological Survey as oil-shale lands that are shown on maps approved by me May 29, 1930, as being subject to the provisions of Ex-

ecutive order No. 5327 of April 15, 1930, withdrawing public oil-shale deposits and lands containing same for classification, are: Colorado, 1,496,000 acres; Utah, 2,754,000 acres; Wyoming, 4,006,000 acres, a total of about 85,000 acres.

Very truly yours,

RAY LYMAN WILBUR.

Exhibit C-380. H.R. Rep. No. 2537, "Bill Concerning Oil-Shale Lands", Feb. 6, 1931 (pp. 1, 3-4, 5, 6, 7, 9):

The Committee on the Public Lands, to whom was referred H.R. 15002, concerning oil-shale lands, having considered the same, report favorably to the House and recommend that it do pass with the following amendment: . . .

STATEMENT

The general mining laws of 1872 prescribed the manner of initiating and obtaining title to oil-shale lands until the 25th day of February, 1920, upon which day there became effective the general leasing act of 1920 (41 Stat. 437; U.S.C., title 30, sec. 193), which entirely changed the public-land policy of the United States as to all lands valuable for oil shale and the other minerals mentioned in the act. The last section of the act (sec. 37) expressly provided that deposits of oil shale and the other minerals mentioned should be thereafter subject to disposition only under the new leasing system, with an exception, however, in the following words:

> Except as to valid claims existent on February 25, 1920, and thereafter maintained in compliance with the laws under which initiated, which claims may be perfected under such laws, including discovery.

During the first decade of this new leasing policy of the law, numberless disputes and endless litigation have re-

sulted from the interpretation put upon this exception by the officials of the Department of the Interior, resulting in a decision of the United States Supreme Court upon January 6, 1930 (Wilbur v. Krushnic, 280 U.S. 306), upholding the contention of oil-shale landowners concerning the doing of annual labor. . . .

DEPARTMENTAL SUGGESTIONS AND OPINIONS

Under date of November 6, 1930, the Secretary of the Interior addressed a letter to the chairman of the Public Lands Committee of the House (see p. 20), suggesting legislation clarifying uncertainties in the law, and specifically mentioned the following: . . .

> 4. What shall be done with questions of discovery?

After careful consideration of all information available, your committee prepared a substitute for all pending bills, and submits that it clarifies the controversial points in a spirit which is fair to the Government, and at the same time respects every existing valid right now held by any individual claimant. It defines a policy for the guidance of the Department of the Interior, and creates two new requirements not heretofore found in the mining laws, but which appear to be necessary, proper, and advisable for the final disposition of the questions affecting oil-shale lands, only. These changes do not apply to any other class of public lands.

TWO NEW REQUIREMENTS

The first and most important of these new requirements is that every claimant for oil-shale lands must apply for patent on or before July 1, 1934.

Never before in the history of mining law has an owner of a possessory right upon mining lands been required to obtain a patent for his lands. It has always been his recognized legal right to exercise practically all the privileges of fee ownership of mining lands upon

ownership, merely of the possessory mining title. The enactment of the leasing law created an entirely new status for oil-shale lands. No new locations may be made. All old locations are the subject of controversies with departmental officials. The principal controversies have affected hundreds, possibly thousands of claims. The active litigation to settle the controversies has covered six years or more. The first decision of the United States Supreme Court did not support the basic policy of the departmental officials.

Everyone concedes there ought to be some end to the oil-shale questions after 10 years of trouble, and that the Government ought to know who claims oil-shale lands. To meet this suggestion, there was drafted a second new requirement, which is that all those who have not applied for patent but who do claim oil-shale lands shall have until October 1, 1932, to record their claims in the proper land office, by filing an affidavit showing that they have done annual labor upon their claims during the period to expire at noon on July 1, 1932. Never before has an owner of any type of mining claim been required to notify the United States of his claim before filing application for patent. But it is deemed fair to the claimants of oil-shale lands and to the best interests of the Government that all claimants come forward within a reasonable time and state whether they will assert their claim. All who decide in the affirmative shall then either file an application for patent by July 1, 1932, or file an affidavit that they have performed the annual labors for the period expiring July 1, 1932. . . . This bill provided a procedure which will work automatically as to all those persons who have already rested upon their right for 10 years; will give them a little over a year to determine whether they desire to perfect their title, and two years more to complete their patent work and apply for patent. All who fail and refuse to do so will automatically forfeit the rights theretofore initiated, after lapse of 12 to 14 years.

It must also be recognized that among those who have net yet applied for patent and a certain number of claim-

ants who have maintained their claims under the laws of the United States and the well-known rules and customs of mining communities which do not require a claimant to apply for patent at any time unless he desires so to do. That is the present law.

STATUS OF CLAIMS NOW AND HEREAFTER INCLUDED IN APPLICATION FOR PATENT

A number of applications for patent are still pending and undisposed of. It is considered by aplicants that annual labor is not required upon such claims. It is possible that for some technical reason, not affecting the validity of the claim as a mining claim, patent may be denied at a time and under circumstances which would put such claims under default of anual labor under the terms of this bill. Therefore, as to all such claims, and any others upon which patent may be applied for before July 1, 1932, it is provided that annual labor shall not be required upon any claim included in an application for patent. . . .

The following is the letter of the Secretary of the Interior, of February 6, 1931:

DEPARTMENT OF THE INTERIOR,
Washington, February 6, 1931.

Hon W. R. EATON,
House of Representatives.

MY DEAR MR. EATON: Referring to your informal request, the following is the latest approximate information relative to oil-shale lands:

1. The areas classified by the Geological Survey as oil-shale lands that are shown on maps approved by the May 29, 1930, as being subject to the provisions of Executive Order No. 5327 of April 15, 1930, withdrawing public oil-shale deposits and lands containing same for classification, are: Colorado, 1,496,000 acres; Utah, 2,754,000 acres; Wyoming, 4,006,000 acres; a total of about 8,256,000 acres.

2. The areas patented to date under oil-shale placers are: Colorado, 112,000 acres; Utah, 69,000 acres; Wyoming 3,400 acres; a total of about 184,000 acres.

3. The areas included in oil-shale claims pending for patent are: Colorado, 68,000 acres; Utah, 14,000 acres; Wyoming, 2,800 acres; a total of about 85,000.

Very truly yours,

RAY LYMAN WILBUR.

Exhibit C-409. February 12, 1931, "Memorandum for the Press (pp. 1, 6) by Secretary of the Interior Wilbur, and attached copy of October 24, 1930, Letter (pp. 7-8) to Secretary Wilbur from Attorney General Mitchell:

Secretary Wilbur today made the following statement to the Senate Committee on Public Lands investigating the Kelley oil shale charges:

No formal notice has been given me as to the purpose of this hearing but I take it for granted that you want my statement on the oil shale charges made by Ralph S. Kelley in the New York World for which, I understand, he received $12,000. As this Department's disposition of oil shale lands is entirely a matter of record, I have had brought here the complete record in each of the 51 cases in which title has issued under my administration. I will be pleased to have you make a minute examination of these records. I have also had segregated the 73 cases which were patented before I took office but after passage of the Leasing Act. It is hoped that you will also make an exhaustive study of these cases. In addition, there are now pending before the Department applications for patent in 63 cases. The records in these cases also are available for your inspection. As these are all original records I ask that they be carefully preserved.

Inasmuch as on November 6 I transmitted to this committee a request for legislation clarifying the oil shale laws, upon which request as yet no action has been taken, and at that time invited a complete legislative review of the whole question, you can rest assured that no one in

the Interior Department is going to object to an investigation of the oil shale situation by any impartial body. We will gladly make all of our records and our officials available for examination by this committee, as was done for the Department of Justice. That Department, on October 24, made an exhaustive study and report. I should like to have included in your record the final report of the Attorney General of the United States.

I wish to assure you that, despite Mr. Kelley's nonsense, the oil and gas reserves of this nation will continue to be conserved by this department, as long as I am Secretary of it, but with regard for all equities and with respect for statutory requirements. Any oil shale claimant who complies with the law can expect his claim to go to patent, uninfluenced by any hysteria arising from Mr. Kelley's statements. The speculator who is imposing on the public domain will continue to go through the house cleaning process instituted by the posting of over 6,400 claims at my direction. . . .

Attorney General Mitchell, after his Department had investigated the Kelley charges, wrote to Secretary Wilbur on October 24, 1930, as follows:

My dear Mr. Secretary:

I am transmitting herewith a copy of the report of Assistant Attorney General Richardson upon the charges made by one Ralph S. Kelley, regarding the administration of oil shale lands in your department.

The Assistant Attorney General has made a thorough and painstaking inquiry. His conclusions are that there is no merit or substance in Kelley's charges against the Interior Department. With his conclusions I fully agree.

The points in his report that stand out in my mind are as follows:

1. Kelley has made an effort to give the public the impression that oil shale lands presently worth untold billions have been or are about to be lost to the Government. In his charges he uses much expressions as "oil shale worth forty billions" and "surrender of bil-

lions of dollars of oil lands." The facts are that oil shale has no substantial present commercial value; that the cost of mining the shale and extracting the oil greatly exceeds the value of the product; that many experts think oil may be more cheaply obtained from coal; and whether it will be found advantageous to extract oil from shale after our present sources of supply are exhausted or at any time is purely speculative. While oil shale may have a potential value and everyone will agree that the Government's interest in these lands should be carefully guarded, the somewhat wild and reckless statements made in Kelley's charges respecting values reflect on the accuracy of his statements.

The Geological Survey estimates a total of 8,257,791 acres of oil shale land in Wyoming, Utah, and Colorado, where the big shale deposits are found. Of that amount, only 175,724 acres have been patented during this and all previous administrations. During the present administration only 42,840 acres have been patented, and of that amount the patent of 23,057 acres was approved by Kelley himself. Patents on 15,778 acres were required to be issued as a result of the Krushnic decision by the Supreme Court, leaving only 7,278 acres patented, the patent of which Kelley either disapproved in whole or in part or said nothing about. The United States still owns 97 per cent of all its original oil shale lands.

2. One of Kelley's chief complaints is directed at the decision of the Interior Department rendered by Assistant Secretary Finney and former Secretary Work as to what constitutes discovery of oil shale by a claimant under the mining law. The department hold that the discovery of the upper layer of oil shale constituted discovery, since it is a geological fact that the presence of this upper layer in the so-called Green River formation shows with certainty the presence of the lower richer strata of shale, Kelley claims that to make a discovery the lower strata, though known to exist, must be opened up or penetrated. There is obviously no basis for charging misconduct in making such a decision. The decision

seems eminently reasonable, but at most it was merely a matter of judgment on a debatable point. Other specific complaints of Kelley's are of this type. . . .

In looking through this report and the attached documents, I should say that there is more evidence to support the conclusion that you and your department have been exceedingly strict and exacting in resisting claims for patents than that you have been too liberal.

Exhibit G-729. Hearing on Senate Resolution 379 before the Senate Committee on Public Lands and Surveys, 71st Cong., 3rd Session (January and February, 1931) (pp. 1, 2, 34, 51, 52, 62-63, 83, 98, 175, 211):

The committee met, pursuant to call, at 10 o'clock a.m., in room 326, Senate Office Building, Senate Key Pittman, of Nevada, presiding.

Present: Senators Pittman (acting chairman), Glenn, Kendrick, Walsh of Montana, and Bratton.

Present also: Hon. Ray Lyman Wilbur, Secretary of the Interior; Hon. Edward C. Finney, Solicitor, Department of the Interior; Northcutt Ely, executive assistant to the Secretary of the Interior; U. E. Goerner, Esq., assistant law examiner, General Land Office.

Senator WALSH of Montana. Gentlemen, in the absence of the chairman of the committee, I will suggest that Senator Pittman be requested to act as chairman.

Senator PITTMAN. Very well.

The resolution upon which the committee will conduct its hearings will be inserted in the record at this point.

(Senate Resolution 379 reads as follows:)

> Whereas it has been recently charged in the public press upon the authority of a former employee of the Government, of reputed good character, long in the service of and charged with the duty of inquiring into the circumstances attending the disposition of the public lands, that considerable areas of such, valuable potentially and otherwise because of

the oil shales in which they abound, have been improvidently, erroneously, and unlawfully, if not corruptly, transferred to individuals and private corporations, to the great loss of the public: Therefore be it

Resolved, That the Committee on Public Lands and Surveys, or any subcommittee thereof, be, and hereby is, authorized and directed to inquire into the charges so made and into the alienation of oil-shale lands of the United States, so far as they have been alienated, and to the practices, rulings, and action of the Department of the Interior in relation to the preservation of disposition of such lands, or of applications for patent to the same, and to make such recommendations as to it may seem appropriate touching needed legislation or other governmental action for the recovery of any such lands as may have been wrongfully alienated, or for a review of any final award by the Secretary of the Interior or any such lands.

The said committee or subcommittee is hereby authorized to sit, act, and perform its duties at such times and places as it deems necessary or proper; to require by subpoena or otherwise the attendance of witnesses; to require the production of books, papers, documents, and other evidence; and to employ counsel, experts, and other assistants. The cost of stenographic service to report such hearings shall not exceed 25 cents per hundred words. The chairmen of the committee or subcommittee, or any member thereof, may sign subpoenas and administer oaths to witnesses; and every person duly summoned before said committee or subcommittee, who refuses or fails to obey the process of said committee or subcommittee, or appears and refuses to answer questions pertinent to the investigation shall be punished as prescribed by law. . . .

Senator WALSH of Montana. I dare say Mr. Finney is more familiar with these matters than the secretary, and I suggest that we begin with him. It will be borne in mind that the resolution was simply referred to this committee for a recommendation as to whether or not the Senate ought to adopt it, and I think we ought to try to get a

general idea of what the charges are, and the foundation for them, as a basis for our further action.

Senator PITTMAN. I was going to suggest, Senator, that you have paid more attention to this than the other members of the committee, and I suggest that we proceed in any manner that you consider advisable.

Senator WALSH of Montana. Let me say to the committee that I have gone over the Kelley letters; the opinion of Mr. Richardson with reference to the charge therein made; the letters of Mr. Finney and of the Secretary in relation to them, and the proceedings before Secretary Work in connection with the reopening of the so-called Freeman-Summers case, made the subject of some considerable comment by Mr. Kelley in his letters.

For the information of the members of the committee, I feel that this preliminary statement ought to be made.

The charges center very largely about this so-called Freeman-Summers case. . . .

Senator WALSH of Montana. I think that is quite appropriate.

We will adjourn until 10 o'clock on Tuesday, February 3, 1931.

Secretary WILBUR. I brought along all the records of the cases under dispute. Will you take care of them for us or do you desire us to take them back with us? You are taking up a very large contract in this proposition. We propose to see this through to the very last case.

Senator WALSH of Montana. I had not thought, Mr. Secretary, of going into it at this time to that extent, but of course the committee will be glad to have anything you care to submit.

Secretary WILBUR. Certain charges have been filed, although no formal ones have been presented. They have been of a certain character and now that the Senate has started in on this we feel that we should have clearance in the Senate.

Senator WALSH of Montana. Absolutely. . . .

Mr. FINNEY. December 1, 1926. That was a general hearing and not limited to this case.

I may say that after the record was received in the department the attorneys for Freeman, Consaul & Helt-

man, asked to be heard orally before me, and by my letter of September 29, 1926, I authorized an oral argument. Subsequently I found Summers was not represented at that time by any Washington lawyer, so on October 14, 1926, I revoked the order for oral argument on the ground that the attorney for Summers could not attend any oral argument that might be had before the department, and advised them the case would be considered on the evidence and briefs filed.

Senator WALSH of Montana. So there was no oral argument?

Mr. FINNEY. Not in that specific case; no, sir.

Senator WALSH of Montana. But intervening, this general conference was had?

Mr. FINNEY. Yes.

Senator WALSH of Montana. I have here a memorandum showing who was present at the conference. I will put it in the record at this time. It is before the Secretary of the Interior on December 1, 1926, on the question of what constitutes a sufficient discovery to support the claim of an oil shale placer locator under the general mining law.

Let me inquire: How did this discussion come to take place, Mr. Finney?

Mr. FINNEY. That is a question that I can not answer definitely. It is my recollection that a number of people in Colorado, in the West, and possibly some members of Congress, asked the Secretary to have a general hearing on this subject.

Senator WALSH of Montana. On what subject?

Mr. FINNEY. On the subject of what constituted a sufficient discovery of a shale mining claim.

Senator WALSH of Montana. Have you any record showing by whom the conference was had?

Mr. FINNEY. I have not been able to find any. I have looked and found none. We found the departmental press notice authorizing the hearing.

Senator WALSH of Montana. Can you put that in the record?

Mr. FINNEY. Yes; that does not say on whose request.

Senator WALSH of Montana. Will you read the notice?

Mr. FINNEY (reading):

DEPARTMENT OF THE INTERIOR

MEMORANDUM FOR THE PRESS

(Immediate release)

OCTOBER 22, 1926.

The act of February 25, 1920, commonly known as the general leasing law, provided that thereafter oil shale and certain other mineral deposits should be subject to disposition only in the form and manner provided by said general lease act, "except as to valid claims existent at the date of the passage of this act, and thereafter maintained in compliance with the laws under which initiated, which claims may be perfected under such laws, including discovery."

The records of the Department of the Interior show that prior to the enactment of the general leasing law numerous locations under the placer mining laws had been made upon alleged oil-shale deposits, particularly in the States of Colorado, Utah, and Wyoming. Some applications for patent are pending before the department, and numerous other oil-shale claims are under investigation in the field.

These cases involve not only a determination of the facts pertinent to each case but determination under the law as to what constitutes a sufficient discovery to support the claim of an oil shale placer locator who is seeking or intends to seek patent under the general mining law.

In view of expressions of interest or requests to be heard by various persons on this subject, the Secretary of the Interior has announced that on December 1, 1926, at 10 a. m., he will hold in his office a public hearing upon this subject. At that time and place any person interested and desiring to submit his oral or written expression of views, statements of fact, or discussion of applicable law, will be heard.

Senator WALSH of Montana. How extensively was that notice published?

Mr. FINNEY. I can not answer that. I know it was published in some of the western papers, Colorado pa-

pers and others. It was open to all the press, in the information room, for distribution.

Senator WALSH of Montana. Do you know whether any of the Washington papers carried it?

Mr. FINNEY. I can not recall.

Senator WALSH of Montana. Were there any special invitations sent out to anybody?

Mr. FINNEY. I think none. I found no record.

Senator WALSH of Montana. You have no recollection?

Mr. FINNEY. No. . . .

(The hearings of December 1, 1926, before the Secretary of the Interior, are as follows:)

HEARINGS, DECEMBER 1, 1926, BEFORE THE SECRETARY OF THE INTERIOR ON THE QUESTION OF WHAT CONSTITUTES A SUFFICIENT DISCOVERY TO SUPPORT THE CLAIM OF AN OIL SHALE LOCATOR UNDER THE GENERAL MINING LAWS

DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY.

Present: Hon. Herbert Work, Secretary of the Interior; Hon. E. C. Finney, First Assistant Secretary of the Interior; Hon. William Spry, Commissioner of the General Land Office; Dr. George Otis Smith, Director, U. S. Geological Survey; Dr. Edward Mead, Commissioner of Reclamation; Mr. Robert D. Hawley, Denver, Colo.; Hon. William L. Boatright, attorney general of Colorado; Mr. E. D. Winchester, consulting geologist, Denver, Colo.; Mr. Fred Carroll, Denver, Colo.; Mr. Charles A. Mitke, consulting mining engineer, Phoenix, Ariz.; Mr. Samuel J. McMullin, Grand Junction, Colo.; Mr. William G. Russell, Denver, Colo.; Mr. L. H. Larwill, Denver, Colo.; Mr. Harold D. Roberts, Denver, Colo.; Hon. John B. Kendrick, United States Senate; Hon. Edward T. Taylor, House of Representatives; Hon. Charles E. Winter, House of Representatives; Mr. George K. Thomas, First National Bank Building, Denver, Colo.; Mr. C. W. Church, Index Shale Oil Company, De Beque, Colo.; Mr. George E. Brimmer, The Prairie Oil & Gas Co., Cheyenne, Wyo.;

Mr. Charles F. Consaul, Mills Building, Washington, D. C.; Mr. Daniel J. Danker, Brookline, Mass.; Mr. Lewis Z. Harrison, 160 Broadway, New York City; Mr. A. C. Harvey, The Pure Oil Co.; Mr. Samuel Leon Levy; Mr. J. D. Northrop, Geological Survey; Mr. L. G. Owen, Mr. Edward F. Johnson, and Mr. Peter Q. Nyce, representing L. P. Lyons; Mr. David A. Shepherd, secretary, The Columbia Oil Shale and Refining Co.; Mr. C. D. Sinclair, American Shale Reducing Co., 115 Broadway, New York City; Mr. H. I. Smith, Geological Survey; Dr. Joseph P. Umpleby, geologist; Mr. F. D. Weaver, Camden, N. J.

DECEMBER 1, 1926—10 a. m.

Secretary WORK. It is unnecessary, of course, for me to state the purpose of this hearing. It has definite and exclusive reference to oil shale—particularly to the laws and the regulations that have been established under them by the General Land Office—and with reference to the General Land Office's responsibility in administering oil-shale lands. This is a "hearing" as far as the Department of the Interior is concerned. We have to make the regulations under the laws, and we have to administer this rather new mining industry. . . .

It may be stated generally that the term "discovery," as applied to a mining claim, means acquirement of knowledge that it is reasonably valuable for placer mining. It is not necessary that shale in paying quantities be found. On that question the courts of Alaska, California, Colorado, Idaho, Montana, Nevada, Oregon, and the circuit court of appeals and other Federal courts have ruled specifically. It is sufficient if shale is found under such circumstances and of such a character and quantity that a reasonably prudent man would be justified in expending time and money in developing it with the reasonable expectation of finding thereon shale in paying quantities.

Now, why is it, we ask, that there seems to be a disposition to apply a fixed rule relative to discovery and perhaps other questions when it has never been done

before and it has never been recognized in regard to any other deposit? Here we have decisions covering metalliferous deposits and we have decisions covering fossiliferous deposits, and here we have a sedimentary deposit, and it was you, yourself, Mr. Smith, in 1916, that called the attention of the department to the fact that this deposit would be difficult to be brought within the provisions of the placer laws; and yet, Mr. Secretary, it was done. In 1916, after the Geological Survey published three different pamphlets calling the attention of the people of western Colorado to this great resource, the land was classified and the General Land Office declared that the land might be entered under the placer act. We came down here in 1918. The question of the disposition of this land in that area was then at issue. We went before the Sixty-sixth Congress, which formulated the leasing bill, and the Sixty-sixth Congress in that leasing bill put in a saving clause protecting the rights of these locators—and why? I have no doubt but what there is some disposition on the part of some people, perhaps overzealous, to talk about us as western speculators; and yet, gentlemen of the department, I want to say to you that we made our shale locations in 1916, 1917, 1918, and 1919 primarily because we understood it was a war resource and that it was a patriotic duty, and the Sixty-sixth Congress understood that and they protected those of us who had acted from that sense of duty. . . .

Secretary WORK. In what connection, if any, was a 15-gallon minimum prescribed as necessary to a permit?

Mr. LARWILL. Only in the letter just mentioned there.

Secretary FINNEY. He quoted the original decision in the Freeman case.

Secretary WORK. Simply it becomes a question with respect to what is the approximate minimum amount of oil necessary in the shale—necessary to prove discovery —is that it?

Mr. LARWILL. Mr. Secretary I do not believe—

Secretary WORK. Isn't that the question? I am not a lawyer.

Mr. LARWILL. No; our belief, if you please, sir, is that under the laws as they exist no minimum requirement should be made as to the amount of oil discovered; if oil shale bearing material is discovered, on each of the claims and then the surrounding evidence shows—

Secretary WORK. The oil shale would carry a little oil?

Mr. LARWILL. Yes; it must carry some oil.

Secretary WORK. You want it to show oil—definite proof of the existence of oil on the surface—you want that to show discovery?

Mr. LARWILL. On the surface, or dig down under the detritus far enough to get into the shale?

Secretary WORK. Either one; but particularly on the surface because that is where you can see without any lens.

Mr. LARWILL. And when you are in the shale you are in the Green River series and it does not make any difference at what page you have opened that series in the book, you have opened it up, you have made a discovery. Yes, sir, that is our case.

Secretary WORK. You just want to prove the existence of the field of oil regardless of its quantity?

Mr. LARWILL. Yes; prove the existence of oil regardless of quantity, but it goes to prove the character of the country.

Secretary WORK. You are getting into geological inference. Would not it be a little better to show oil and there would not be so much inferential?

Mr. LARWILL. You must show oil Mr. Secretary on every claim. Oh, yes; you must show the oil on every claim.

Secretary WORK. Well, that gets back to the first proposition; you simply want the department to be satisfied that you have discovered oil-bearing shale, and that is discovery?

Mr. LARWILL. In this area?

Secretary WORK. Well, anywhere. Why in that area?

Mr. LARWILL. In this area because it is a known mineralized area of oil shale, and that is all that we are concerned with.

Secretary WORK. If it is discovered anywhere I think it would be oil-bearing shale just the same.

Mr. LARWILL. If you have discovered the mineral that you are after—

Secretary WORK. You object to the specified minimum?

Mr. LARWILL. Any minimum—any limitation. The law does not; the cases do not.

Mr. HAWLEY. It might be well Mr. Secretary to give to you a suggestion which has occurred to us in our consideration of some of these things as to what in general a rule might be.

Secretary WORK. We will be glad to hear it.

Mr. HAWLEY. A legally sufficient discovery to form the basis of a location of an oil-shale placer claim appears when it is shown that oil-yielding shale is physically exposed upon the claim, and the evidence is of such a character that a person of ordinary prudence would be justified in further expenditure of his labor and means with a reasonable prospect of success in developing a valuable mine. Evidence may be to the effect or of such a character as to show that the shale so exposed is a part or portion of a formation or deposit which is known through geological evidence, exploration, or development at other points to carry oil shale of value.

Secretary WORK. I say that is a good statement. You require a little more discovery than I indicated a moment ago. [Laughter] . . .

Here was my theory: On the surface, according to the testimony, and that includes the testimony of one of the Government engineers, there had been discoveries of shale, exposures or workings. Now, probably that bed of shale in and of itself would not have paid to work. In fact, none of them would pay to work at the present time, but, the miner who takes the piece of land is entitled to consider not only the top but what is below and the presence of these richer beds in the land may properly be coupled with what is on the top and will justify a man

going down through this formation with the prospect of developing a mine.

That is the theory of the decision, Senator, right or wrong.

Senator WALSH of Montana. I can understand that perfectly well and I can understand likewise the theory that there being a little strata on the surface, but the richer strata being exposed in cuts and canyons elsewhere, I can very well understand that contention, the discovery being made of the little strata on the top, although there are intervening barren strata, that the contention may very justifiably be made, that having discovered a little strata at the top, he may take into consideration what he learns from the exposures even miles away, of the existence of the rich strata below. That I can understand perfectly well. I take it you had that in mind in writing your opinion.

Mr. FINNEY. Yes, sir.

. . . .

Secretary WILBUR. No formal notice has been given me, Mr. Chairman, as to the purpose of this hearing, but I take it for granted that your whole inquiry here is with regard to oil-shale charges made by Ralph S. Kelley in the New York World, for which I understand he received $12,000. As this department's disposition of oil-shale lands is entirely a matter of record, I have had brought here the complete record in each of the 51 cases in which title has issued under my administration. I will be pleased to have you make a minute examination of these records. I have also had segregated the 73 cases which were patented before I took office but after passage of the leasing act. It is hoped that you will also make an exhaustive study of these cases. In addition, there are now pending before the department applications for patent in 63 cases. The records in these cases also are available for your inspection. As there are all original records I ask that they be carefully preserved.

I might state that we had some 15 members of the Land Office working 12 hours a day for nearly five weeks

making this information available, so that was an exhaustive study.

Inasmuch as on November 6 I transmitted to this committee a request for legislation classifying the oil-shale laws, upon which requests as yet no action has been taken, and at that time invited a complete legislative review of the whole question, you can rest assured that no one in the Interior Department is going to object to an investigation of the oil-shale situation by an impartial body. We will gladly make all of our records and our officials available for examination by this committee, as was done for the Department of Justice. That department, on October 24, made an exhaustive study and report. I should like to have included in your record the final report of the Attorney General of the United States.

Exhibit C-149. May 26, 1931, Letter of Instructions to J. Arthur Moore, Chief of Field Division, General Land Office, Denver, Colorado, from Acting Commissioner Harell and Secretary of the Interior Wilbur (pp. 1-3):

It was not the intent of the Freeman-Summers decision to indicate any specific geographic area other than the particular area in controversy within which the findings should govern. . . . The Department based its decision on the fundamental requirements of the mining laws, and any case coming within the broad principles laid down in that decision . . . should be adjudicated in accordance with those principles. . . . Where . . . the Chief of Field Division is satisfied from reports of his engineers or from other official geologic data that the claims which are subject to report are in part of the Green River formation which carries oil shale in valuable quantities and quality, the fact should be conceded, thus narrowing any issue, if any, as to discovery to the inquiry whether shale that would yield oil on destructive distillation was exposed on the location or whether claimants were diligently engaged in the search for oil shale at the date of the leasing act or at the time of an appropriation of the land under any other public land law to which it was subject.

Exhibit C-352. Annual Report of the Secretary of the Interior for the Fiscal Year Ending June 30, 1931 (pp. 29-32):

OIL SHALE

Since the last annual report the circumstances surrounding the Kelley oil-shale charges have been brought to light by the Senate Committee on Public Lands. It will be recalled that on September 28, 1930, Ralph S. Kelley, a land office employee, former chief of field division at Denver, published a letter of resignation, accusing the department of collusion with Colorado oil-shale locators in disposing of lands worth many billions of dollars. Subsequently a series of 14 syndicated articles appeared in the New York World amplifying these charges. Kelley had been called to Washington on July 7 to take charge of oil-shale matters in the Washington office, following his protracted but indefinite criticism of handling of cases here, and had failed to report for duty until August 5. Correspondence between Kelley and the World, brought to light by the Senate committee, showed that Kelley, from July 29 to the date of his resignation, September 28, had been arranging for sale of his material to the World. He signed a contract on September 11 under which he was to receive $12,000 if he remained in Government service and completed his articles before resigning, or $6,000 if he was caught and discharged....

Later the Senate Committee on Public Lands developed the facts stated above about his employment. He was paid his $12,000, or about 50 cents per word. The venture was not a financial success, however. The World's correspondence with its agents and the 200 or more papers to whom it tried to sell the story makes entertaining reading but has no place here. However, in view of the publicity given the Kelley matter, the statement by the World published on December 25, 1930, in reply to the following letter, was gratifying.

[Statement by the World]

"From Secretary Wilbur:

"Between October 6 and 10, 1930, inclusive, the World published a series of articles over the signature of Ralph S. Kelley, a former chief of the field division of the United States land office at Denver, Colo. These articles not only criticized my administration as Secretary of the Interior but impugned my official and personal conduct.

"I do not question the absolute right of the World or any other newspaper to comment fairly upon the acts or policies of the Department of the Interior or of myself as its responsible head, nor the right to obtain, if possible, an investigation of the decisions, policies, or the personnel of the department. For my part I welcome such an investigation.

"I do deny your right, however, to publish such statements as were made by Mr. Kelley which reflect upon my personal integrity and which were untrue in fact. . . .

"The World has already stated, and it is very glad to state again, that in publishing Mr. Kelley's articles it did not indorse or guarantee the validity of his criticisms. It merely affirmed its conviction after careful investigation of Mr. Kelley's record that his charges were made in good faith and with technical competence. The only purpose which the World has sought to attain by the publication of Mr. Kelley's articles was to insure a full inquiry by the Senate into the questions which Mr. Kelley raised, and it has complete confidence that if the Senate authorizes the Public Lands Committee to conduct this investigation the truth will be fairly ascertained. The World is happy to note that Doctor Wilbur himself welcomes such an investigation, for his cooperation in this matter will contribute greatly toward public confidence in it. As to the question of Secretary Wilbur's personal integrity which he raises in this letter, the World can only say it has never believed or implied that in all these complicated transactions he did any dishonorable thing."—EDITOR THE WORLD. . . .

The oil-shale problem arises from the provision of section 37 of the mineral leasing act which permits claims located prior to the date of the act (February 25, 1920) to proceed to patent in compliance with the mining laws as they existed on that date. The principal requirements are good faith of the locator, performance of assessment work, and discovery. Some months prior to Kelley's resignation a Supreme Court decision in the case of Wilbur v. Krushnic had held that a locator in default in assessment work could resume work at any time in the absence of a challenge by the United States. Thereafter, convinced that many claims were being held without compliance with the law's requirement of assessment work, the department in January, 1930, had undertaken the task of physically posting notices of forfeiture on each claim as a preliminary step to adjudication. This work had been under way many months to the time of the Kelley matter. To date about 7,500 such claims have been posted; about 5,500 remain. Where the law as to discovery, assessment work, and good faith of locators has been complied with, patents issue on completion of $500 of development work and application for patent. About 195,000 acres have been patented in all. The estimated oil-shale area in Colorado is about 1,496,027 acres, in Utah, 2,754,959, and in Wyoming, 4,006,805; 156,024 acres are included in two naval reserves.

Currently we have under way the immense task of adjudicating the status of all outstanding claims which the Kelley fiasco temporarily interrupted. We have requested the Senate Committee on Public Lands to continue to a thorough conclusion its examination of the oil-shale matter, particularly if it can lead to legislation clarifying the questions left uncertain by the leasing act.

The House Committee on the Public Lands has reported out a bill (H. R. 15002) designed to fix a dead line by which all claims must proceed to patent or be abandoned and relaxing the department's conservation policy by excusing certain defaults in assessment work. A full summary of the oil-shale problem and the department's requests for legislative clarification will be found

in the report on this bill. (Report 2537, House; 71st Cong. 3d sess.)

Exhibit C-157. September 18, 1931, Letter to Commissioner, General Land Office, from Assistant Secretary of the Interior (p. 6):

With respect to your finding that the Annex No. 6 is void for lack of discovery, the Department believes the conclusion fully warranted. There is nothing said in the case of *Freeman* v. *Summers* that dispenses with the legal necessity of an actual discovery within the bounds of the location. *Alturas Shale Company* (decided July 9, 1930, unreported).

Exhibit C-699. August 4, 1933, Memorandum signed by Commissioner, General Land Office, and Assistant Secretary of the Interior (p. 1):

MEMORANDUM FOR THE
ASSISTANT SECRETARY

The attached letter is submitted for your approval, following the procedure established through verbal instructions to this office by Mr. Northcutt Ely, Executive Assistant to Secretary Wilbur, sometime in March of 1931, that letters to Registers, notifying them of approval of oil shale mineral entries for patenting, be submitted for approval of the Secretary, accompanied by the records and memoranda stating in chronological order the various actions taken in each case.

Mr. Ely had charge of oil shale matters in the Department and this action was deemed advisable at the time because of the flareup in regard to oil shale matters caused by the charges made by former Chief of Field Division Ralph S. Kelley in articles published in the "New York World," and by the hearing thereon before a subcommittee of the Senate Committee on Public Lands and Surveys, of which the late Senator Walsh was a

member. The matter was dropped by the committee at the close of the hearing, no recommendation being made.

Under date of April 18, 1931, Senator Gerald P. Nye, Chairman of the Committee on Public Lands and Surveys, advised the Secretary of the Interior relative to his inquiry of April 10, 1931, as follows:

> "Responding now to your letter of April 10, I have conferred with Senator Walsh and beg to advise that there is no reason why your Department should not proceed to final disposition of the pending application for patents to oil shale lands in conformity with the law."

There are only 14 oil shale applications for patents and 14 entries pending at this time and I am of the opinion that these cases and any new oil shale cases should be adjudicated as other mineral entries are adjudicated without referring them to the Department, and will be so handled hereafter if you agree with my views in this regard and approve this memorandum.

Approved: Aug. 10, 1933

/s/ [Illegible]
Commissioner.

/s/ [Illegible]
Assistant Secretary.

Exhibit C-418. June 10, 1936, General Land Office Memorandum to Mr. Moyer from Mr. Carpenter (p. 1):

The attached letter from Mr. Leech suggests the following procedure relative to the oil shale placer locations in western Colorado and eastern Utah. . . .

It seems clear that these claims, like other mining locations on the public domain, are subject to adverse proceedings for failure to comply with the law. The court in the case of Ickes vs. Virginia-Colorado Development Company (295 U.S. 639) confirmed the long estab-listed rule that the Secretary of the Interior has author-

ity to determine that a mining claim is invalid for lack of discovery, fraud, or other defect, or that it is subject to cancellation for abandonment. Proceedings have been brought by the Land Department in many cases in the past based on charges of invalidity in any or all of the above particulars, and, where the facts adduced supported the charges brought, the locations have been declared null and void.

Exhibit C-776. January 20, 1939, Letter from D. D. Potter, Esquire, Rocky Ford, Colorado, to Senator Ed C. Johnson (pp. 1-4):

A short time ago I learned that you introduced a bill, S. 4138, at the last session of Congress; that this bill was not enacted at that session, but would probably be re-introduced at the present session. Those interested in the oil shales would be very much opposed to the passage of this bill.

Beginning with 1916, and for several years thereafter, a large number of placer mining claims were located on the oil shale lands of Colorado, Utah and Wyoming, at the instance of and through the promotion of the United States government. At that time it was believed by the best geological authorities that the known oil reserves in the United States would be exhausted by 1935. The U. S. Geological Survey believed that the oil shales would provide a supplemental supply of motor spirits and other oil products. Oil had been produced from shale commercially in Scotland and France for more than seventy-five years.

The work on the shales was really initiated by the U.S. Geological Survey as early as 1913, when M. C. Woodruff and David T. Day of the Survey began an examination of the Green River Formation in Colorado and Utah, and made rough field tests to determine the richness of the shales. I would respectfully refer you to Bulletin 641-F of the U.S.G.S., entitled "Oil Shale in Western Colorado and Adjacent Areas", by Dean E. Winchester. This bulletin was published December 18,

1916, and no doubt is still available. Woodruff and Day had before that time published a less complete report.

The Winchester bulletin was given wide circulation, and David T. Day and others from the Geological Survey visited the larger cities in the mining states and vigorously promoted interest in shale. R. D. George, our state geologist, and Victor C. Alderson, president of our School of Mines, were asked to co-operate with the Government in creating public interest in the shales. Both of them became very active, lectured and wrote at length about the oil shales, and undertook experimental work, which was fostered by the Bureau of Mines. Later, the Bureau of Mines established an experimental plant at Rulison, Colorado, and for several years mined and retorted the shales, producing considerable oil and securing much valuable information.

In 1918, an agitation was stated for the enactment of an oil leasing bill. The owners of oil shale placer mining claims, being uncertain how their rights might be affected, asked for a hearing before the Secretary of the Interior, and such hearings was granted at which Assistant-Secretary Vogelsang presided. I believe this was about February 20, 1918.

There were present at this hearing, from the Department: M. F. Finney, Solicitor; George Otis Smith, Director of the U.S. Geological Survey; Van H. Manning, Director of the Bureau of Mines, and Clay Tallman, Commissioner of the General Land Office. There were also present a number of Senators and Representatives from Colorado, Utah and Wyoming.

After this hearing we were assured by the Secretary and the other gentlemen representing the Government that, while they favored the enactment of a leasing law, they would co-operate with us in having our oil shale placer mining claims excepted from the operation of that law. Solicitor Finney, Senator Charles S. Thomas of Colorado, Mr. John H. Fry and myself conferred together and drafted a clause excepting the oil shale placer claims from the operation of the leasing law. With slight modi-

fications, our proposed clause became section 37 of the Oil Leasing Bill, which was enacted February 25, 1929.

* * * *

There has been performed on practically all of these unpatented shale claims, which were valid and existent at the time of the passage of the Oil Leasing Law, from $500 to $1000 worth of work and improvement on each claim. There has been expended upon unpatented oil shale claims owned by myself and associates not less than $500,000. It is our belief that we will be able, when conditions in the oil business and in business generally further improve, to patent these lands and operate them with the hope of recovering our investment. . . .

The oil shale claimants want only the opportunity of patenting their claims under the law under which they were initiated, to the end that they may go forward with the development of this industry. . . .

Exhibit C-776. March 24, 1939, Letter to D. D. Potter from Senator Ed C. Johnson (p. 1):

Thank you for your exhaustive letters and explanation of your position in regard to S. 4138 which I introduced at the last Session of Congress.

You will be pleased to know that I have not reintroduced this measure and that the whole matter is now closed. I will not have anything further to do with legislation withdrawing unpatented shale lands.

Exhibit C-777. June 16, 1939, Letter to Representative De Roven, Chairman, House Committee on Public Lands, from Secretary of the Interior Ickes (pp. 2, 3):

. . ., an examination was made by the General Land Office in the years between 1920 and 1930 to determine the status of the oil shale placer mining claims on and about the Green River shale formation in Colorado, Wyoming, and Utah. . . .

It should be emphasized that valid existing claims may be maintained, unaffected by the proposed bill, by com-

plying with the laws under which they were initiated. Further, the proposed legislation is not retroactive so as to enforce the forfeiture of claims by reason of defaults occurring prior to its effective date, but would have only prospective operation. . . .

In view of the considerations set out herein, I recommend that H.R. 6560 be enacted. . . .

Exhibit C-778. July 25, 1941, Letter to Senator Abe Murdock from Secretary of the Interior Ickes (p. 1):

I regret that the pressure of legislative matters has caused delay in replying to your letter of June 9 with reference to H.R. 6580 of the 76th Congress.

With your letter was enclosed a letter addressed to you from the Secretary of the Mountain States Development Company which urges that you give your support to H.R. 6580, a bill relating to placer mining claims. That bill was introduced at the request of the Department for the purpose of obtaining authority to clear up certain claims which have been pending since the passage of the Mineral Leasing Act. These claims were saved by section 37 of the act and because of a deficiency in the law it has not been possible to require that they be either developed or abandoned. The bill was passed by the House but because of amendments by the Senate Public Lands Committee which would have made the measure of questionable value it failed of enactment.

I have thought that the proposed investigation under Senator O'Mahoney's resolution, S. Res. 53, would provide a good opportunity to present this matter and to obtain a full consideration of its merits, and pending the commencement of the investigation I have not submitted the bill to the present Congress. . . .

Exhibit C-781. June 17, 1943, Letter to Senator Edwin Johnson from Secretary of the Interior Oscar Chapman (p. 1):

. . . upon recommendation of this Department, S. 1139 has been introduced in the United States Senate. This bill would require the oil shale claimants to record their claims in the General Land Office within a specified time, and to perform annually the assessment work contemplated by Section 2324, Revised Statutes, under penalty of forfeiture for failure to comply.

Exhibit C-1024. November 15 and 16, 1943, Hearings before a Subcommittee of the Senate Committee on Public Lands and Surveys, Pursuant to S. Res. 241, "*Administration and Use of Public Lands*" (pp. 3783-84, 3798-99, 3804-05):

STATEMENT OF D. D. POTTER,
ROCKY FORD, COLO.

Mr. POTTER. For the record, my name is D. D. Potter, attorney at law, and I practice generally over the State of Colorado.

The CHAIRMAN. What is your home address?

Mr. POTTER. Rocky Ford, Colo.

I wish to make a statement which I have written here, but I may interpose other matters, and I will give a copy of this written document to you when I am done.

I represent several small companies owning unpatented oil-shale lands in Garfield County, Colo. The names of these companies are: Standard Shale Products Co. of California; the Federal Shale Oil Co.; Crystal Shale Oil Corporation; the National Shale & Metals Co., all Colorado companies. I also represent the interests of my wife, Gertrude I. Potter, and myself.

I am particularly interested in S. 1139, Seventy-eighth Congress. Similar bills were introduced in the Seventy-fifth Congress and in the Seventy-sixth Congress. As I am informed, all of these bills were introduced at the request of the Department. The effect of S. 1139 would be to confiscate all unpatented claims for minerals covered by the Mineral Leasing Act of February 25, 1920.

. . .

The CHAIRMAN. I am sorry to have interrupted you so much, Mr. Potter, but this has been very interesting.

Senator MILLIKIN. Did this gentleman describe himself before he started testifying? He is one of the pioneers in the oil-shale business in this western country. He went in there when few were interested in the subject. He has spent literally hundreds of thousands of dollars in the development of oil shale, has worked in the experimental work. If you examine the reports in the Bureau of Mines you will find they have accepted logs of his on the richness of oil-shale beds. He is an outstanding man in the oil-shale business. He hasn't ever taken a free ride on anybody. Since he hasn't said that for himself, I want to say it for him.

The CHAIRMAN. We are very glad to have that.

Mr. POTTER. Shall I proceed?

The CHAIRMAN. All right.

Mr. POTTER. What I would like to call your particular attention to is the fact that from the very beginning of the oil-shale industry it was promoted by the Bureau of Mines and the United States Geological Survey; but the Department, they sent out men here into the field—sent out reports, they urged our people to get busy and locate and develop these claims.

Now, I have here before me—I am not going to read all of it—but if you please I would like to have the gentlemen look at this, glance at it, if they will, please. That is a report from David E. Day, and associates, sent out, I believe, in 1914 in which they made a report on the shales of the United States Geological Survey; and here is another one made out—the author was Denwin Chester, sent out in 1916. A man from the Department appeared in Denver, Los Angeles, Salt Lake City, and all over the western country, and asked us, for God's sake, to get behind the Government and help get some oil. They were short of oil in 1917 and in 1918, just as they are now, and it so happened that in 1918 there was a shortage. They also asked our university, our school of mines, or State geologists, and the president of our school of mines to promote this. The David E.

Day report appears here, and in these different places, people went in and located these claims and they believed, many of them at that time—in fact, the geological department mentioned these things could be done for $50,000—plants started, oil reduced, and so forth; but the Government promoted all of this stuff in 1916, 1917, and 1918, and urged people to get into this. That is when I first got into it, in 1916.

Now, after we got nicely started there came to be a question of whether or not the shale lands were subject to location under the placer law. I went to Washington, representing quite a number of shale men. Senator Millikin knows about them. About the 20th day of February 1918 I appeared with John H. Fry, one of our lawyers, and two engineers from the Pierce Engineering Co., of Chicago, with our State geologist. We had asked for a hearing, and we were heard before the Secretary of the Interior, or the First Assistant, Mr. Vogelsang. There were present the head of the Geological Survey, George Otis Smith, Van H. Manning, Director of the Bureau of Mines, and Clay Tallman, Commissioner of the General Land Office.

We had this hearing, we explained to them what the situation was, and we were assured that our locations would not be interfered with; that they would give us every cooperation, and were very anxious to have us go ahead and do what we could. There was a leasing bill pending. They favored the leasing bill. They figured 10 percent of this land would be taken up under private locations, private enterprise might go ahead, and they thought it was a good idea to have private enterprise to the extent of 10 percent, or thereabouts, as estimated. They assured us that we would have their full cooperation.

I stated at that hearing that if they would say that they would not cooperate, I would like to know it. I had only spent about $50,000 at that time, which I had gathered from my friends and neighbors, and if they were not going to cooperate, I would seek to repay the men. That is the proposition I made before Mr. Vogelsang's committee.

We went before the Public Lands Committee of the House. They asked us to present the information that we offered to them at that time. We had spent $25,000 on engineering information. We did go before the committee; there is a record of that. That was on the 26th day of February 1918, and that can be found in the public records. No doubt it will have a complete record of everything that everybody said. We went there at the special request of the Secretary of the Interior, and these other men, and of these outfits who were interested in mining and in the public land.

Now, right here, is a little reprint, and I would like to read the first statement which was made by Professor George, our State geologist:

> Mr. GEORGE. We appreciate the privilege you have given us of coming before you, but we would like to state that the hearing is not of our seeking. The facts we wish to present to you today were presented to the Department of the Interior some days ago, and they requested us to make the same presentation to your committee, and it is with that in view that we are before you today.

We went before them because we were asked to, and I call attention to the fact that the secretary or, rather the chairman of the Public Lands Committee of the House at that time was Scott Ferris. Probably none of you knew him; he had been a friend and neighbor of mine in Oklahoma, and we had to lend each other $5 now and then. I have loaned Scott that much money on several occasions, but I am not saying anything about what he loaned me. . . .

The CHAIRMAN. Do you, of your own knowledge, have any knowledge of difficulties thrown in the way of the small operators to get to patent?

Mr. POTTER. Not beyond what were thrown in the way of everybody else. All kinds of difficulties were thrown in the way of all shale claimants for years, until the panic of 1929 came along, and the oil price from 1931. Now, as a matter of act, I think this—I think that if the Department is ready to cooperate that we

have got to the point where we probably could go ahead, and as I say, the people whom I represent, and there are others just like them, are small people of ordinary means, and they have not been able to go ahead and patent and develop.

The CHAIRMAN. They have not been able to do the essential things toward a patent; is that what you mean to convey?

Mr. POTTER. I mean they haven't been able to go ahead and have this engineering work done, and legal work done; dig up the $2.50 an acre which is required for placer-mining land, which would cost five, six, or seven dollars an acre, at least, to do that. They haven't been able to do that. As a matter of fact, on account of this great litigation nobody has been willing to sit in and help finance these things until, perhaps very recently.

Now, I think, gentlemen, that that covers it.

The CHAIRMAN. I think you have covered the subject splendidly. We will be glad to have your statement for the record.

(The written statement of Mr. Potter is as follows:)

As you all know, a movement for the development of the shales is now being promoted by the Department, through the Bureau of Mines. It is interesting to note that we were faced with an oil shortage in 1917 and 1918, during the First World War, and that we are now again faced with an oil shortage, and again the Department seeks to interest the public and to promote the development of the oil shale.

In 1918 an agitation was started which resulted in the passage of the oil leasing bill of February 25, 1920. The owners of oil shale placer mining claims, being uncertain as to what the effect of such a bill might be, asked for a hearing before the Secretary of the Interior, and such a hearing was granted, at which Assistant Secretary Vogelsang presided. I believe this was about February 21, 1918. There were present at this hearing, from the Department, E. F. Finney, Solicitor; George Otis

Smith, Director of the United States Geological Survey; Van H. Manning, Director of the Bureau of Mines; and Clay Tallman, Commissioner of the General Land Office. There were also present a number of Senators and Representatives from Colorado, Utah, and Wyoming.

After this hearing we were assured by the Secretary and the other gentlemen representing the Government that, while they favored the enactment of the leasing law they would cooperate with us in having our oil shale placer-mining claims excepted from the operation of that law. Solicitor Finney; Senator Charles E. Thomas, of Colorado; Mr. John H. Fry and myself conferred together and agreed upon the clause excepting the oil shale placer claims from the operation of the leasing law. With slight modifications our proposed clause became section 37 of the oil leasing bill.

At the special request of the Department, we appeared before the Public Lands Committee of the House on the 26th day of February 1918, and were given every assurance, both by the Department and the member of the committee that our rights would be fully respected and that we might expect the full cooperation of Government in our effort to develop the shales. There is no doubt a complete record of these hearings. . . .

I would call your attention to the fact that the companies which I represent are made up of ordinary people of limited means, who became interested in the oil shales through the promotion of the Department itself. . . .

Exhibit C-317. April, 1954, Bureau of Land Management Monograph, "Mining Locations, Entries and Patents" (p. 23):

There is a variance between the amount of mineral that must be found to prove a valid discovery. Thus, where a discovery is made in a new area the showing of mineral must be better than where previous workings

have shown that a minor mineral showing at the surface usually results in the finding of valuable deposits at depth. The amount, however, may differ in accordance with the size and continuity of the vein. If a vein is narrow the amount of mineral showing per ton or the indications must be more to justify a discovery than if the vein is wide. This is self-evident since in the former, it is necessary to mine worthless rock on one or both sides of the vein in order to remove the mineral bearing material and the average value of the mined material per ton is correspondingly reduced.

Where discovery is made in a recognized mining area other elements in addition to the amount of mineral disclosed and the size and length of the vein need to be considered. The major one is what other mines disclose that reasonably bear on the future possibilities of the claim in question. In a series of cases arising within a limited area in the Coeur d'Alene Mountains in Idaho, the Department has recognized that past developments have shown that in a mine based on a discovery in a surface vein or veinlet or shear zone of minute fractions of siler, lead or copper a rich pay ore at depths up to 1,500 feet is frequently encountered. *Lincoln Mining Co.*, A-21978, December 22, 1939 (unreported). That case cited the Commissioner's decision of August 9, 1915, in Coeur d'Alene 08480, recognizing a similar discovery, also *Oom Paul Consol. Mining Co.*, D-22955 of July 23, 1915, (unreported) and other cases. Of similar purport in another developed area see *East Tintic Consolidated Mining Co.*, 43 L.D. 79, reversing 40 L.D. 271 and 41 L.D. 255. See also *Freeman* v. *Summers*, 52 L.D. 201. Obviously, such cases can only be followed in the particular area where the rule has been established. What has been established in the Coeur d'Alenes for example cannot be the basis of a holding in the Rocky Mountains. The rule does not extend to surface or shallow showings which do not contain even a trace of the valuable mineral presumed to lie at depth. *Austin* v. *Mann*, 56 I.D. 85 (Coeur d'Alene). In other words, mineral must be found. . . .

Exhibit C-788. Legislative History of Act of July 20, 1956, 70 Stat. 592, 30 U.S.C. Section 122 (pp. 2-7):

2. Excerpts from Transcript of April 23, 1956, Hearings on H.R. 6501 Before the Subcommittee on Mines and Mining of the House Committee on Interior and Insular Affairs:[1]

Representative Wayne N. Aspinall, of Colorado, who had introduced H.R. 6501:

> [T]his bill would amend that Act [Act of July 17, 1914] to allow patent to be granted under the mining laws so long as the claim involved was valid prior to the passage of the Act of 1920 and providing that their validity is maintained. This bill would not bestow any right on claims which have, or which will, lapse.... (pp. 2, 3)
>
> As it now stands, if a mining claim exists on a leasable mineral under land upon which a non-mineral surface right has been granted under the Act of July 17, 1914, the only way this valid right can be taken to patent is for the mining claimant to obtain and reconvey to the government the surface title. After this, the mining claim can be granted and patented and the surface right can be reestablished. Thus, if the surface owner refuses to cooperate in this process, the mining claimant is left with a valid right—but a right foreshortened by his inability to obtain patent. (p. 3)
>
> * * * *
>
> In my own area, this would affect mining claims for oil shale, a mineral or oil bearing rock reserved under the Leasing laws. (p. 4)
>
> * * * *
>
> This matter first came to my attention in a case where there exists an isolated tract of land surrounded on all sides by patented shale lands or

[1] Since the transcripts have not been edited, reproduction of them cannot be made, without authorization from the House of Representatives. The transcripts can however be inspected, and copied by hand; that was done in preparing these excerpts.

claims upon which patent is about to issue. This isolated tract is covered by both valid mining claims established under the mining laws and by surface rights granted under the Act of July 17, 1914 (38 Stat. 509; 30 U.S.C., secs. 121-123). It is a sort of 'no man's land'. The surrounding land was also covered by surface rights under the above act, but the mining claimants were able to obtain the cooperation of the surface owner and thereby obtain patent to their mining claims. As it now stands, these claims have little value for mining due to their uncertain status relative to surrounding lands. This legislation would seem to fill out the intention of previous law by allowing patent on this land just as it is now allowed on withdrawn land where agriculture entry has not resulted in a surface patent. (pp. 4, 5)

* * * *

The law of 1914 which provides for the reservation of minerals and patents to be issued at that date did not make it possible to gain a patent on mineral claims which were validly entered into between 1914 and 1920. In my district there are a few cases—and we do not know how many but there are a few of them—where there is a valid existing mineral claim to oil shale where there was also a patent on the surface rights of the same land. In one particular case the owner of the surface rights through a patent issued by the government has refused to reconvey any surface rights to the government so that the government then could issue a new patent including the minerals in the area and thereby permit the new patentee to give a deed to the owner of the surface lands. (p. 7)

By so refusing, even though he was offered a good price for his cooperation, he has by his action prohibited the owner of the minerals to secure a patent which was intended should be the case when the law was passed. In other words, the 1914 law did not have as a part of its intention the denying to a

person who did establish a valid mining claim the right to proceed to patent. (p. 7)

Mr. Lewis E. Hoffman, Minerals Staff Officer:

I might say, statistically, I have the figures here:

From 1946 to 1955 inclusive, we patented 67 oil shale claims [sic-patents] mostly in Colorado, amounting to 84,602-plus acres; three oil and gas claims amounting to 480 acres, and one sodium claim amounting to 1760 acres. The sodium claim was in California. The oil shale patents were in Colorado and one in Utah. There were several also in California, which are the only three states really affected by minerals leasing. (p. 13)

. . . I hope the committee passes the bill or reports favorably on it.

3. Excerpts from Transcript of May 1, 1956, Hearings on H.R. 6501 Before the House Committee on Interior and Insular Affairs (testimony by Representative Aspinall):

* * * this does not have to do with any other minerals except the leasable minerals to which no one can get a patent since 1920, but these leasable minerals were patentable up until 1920, and this refers only to them. As far as I know, there are only just a few cases that are involved, and most of those cases are in the oil shale lands of eastern Utah and western Colorado. That is all this bill refers to. (pp. 3, 4)

4. Excerpts from Senate Report No. 2524, July 11, 1956:[1]

The Committee on Interior and Insular Affairs, to whom was referred the bill (H.R. 6501). . . having considered the same, report favorably thereon and recommend that the bill do pass.

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[1] The House Report, No. 2198, was similar.

OBJECTIVES OF H.R. 6501

If enacted, H.R. 6501 would amend a 1914 Act of Congress so as to permit holders of valid and subsisting rights to certain mineral deposits acquired by discovery and location made under the mining laws of the United States prior to the date of February 25, 1920, to perfect the titles thereto by obtaining patent to the mineral estate only. This would obviate the present requirement, impossible to meet in some cases, that holders of such claims, in order to obtain patents thereto, must first obtain the outstanding interest of the surface owner and thereafter reconvey the surface estate to the United States; a patent to the mining claim, including both mineral and surface estates, is then issued to the mining claimant. . . .

Under the Department of the Interior decision in the case of James W. Bell (52 I.D. 197 (August 1927)) the owner of a valid mining claim located before February 25, 1920, on lands covered by the 1914 act, in order to obtain a patent to the minerals, is required to acquire the outstanding interest of the surface owner and thereafter to execute a deed of reconveyance to the United States; subsequently, a mineral patent to the land, including both the surface and minerals, is issued to the mining claimant. From 1946 to 1955, inclusive, 71 mining claims, including 67 oil shale claims, were issued under this procedure. The Committee is informed that in a few cases mining claimants have been unable to obtain the cooperation of the owners of the surface estate and have been prevented thereby from obtaining patent to the mineral estate.

If enacted, H.R. 6501 would permit a qualifying mining claimant to be issued a patent to the mineral estate without requiring a reconveyance of or otherwise disturbing the surface estate. . . .

DEPARTMENTAL REPORT

Department of the Interior
Office of the Secretary
Washington, D. C., March 20, 1956.

Hon. James E. Murray,
Chairman, Committee on Interior and Insular Affairs, United States Senate, Washington, D. C.

My Dear Senator Murray: This is in reply to your request for the views of this Department on S.2115, a bill to amend the act of July 17, 1914, to permit the disposal of certain reserved mineral deposits under the mining laws of the United States.

* * * *

. . . the problem which S. 2115 is presumably intended to clear up concerns valid and subsisting rights acquired by discovery and location under the mining laws made prior to the enactment of the Mineral Leasing Act of February 25, 1920 . . . .

* * * *

The apparent purpose of this bill is to obviate the necessity for requiring such as reconveyance and to permit the locator or his successor in interest to be issued a patent for the reserved minerals which are subject to valid and subsisting rights acquired by discovery and location under the mining laws.

Though we heartily endorse the purpose of S. 2115, we believe that certain amendments of a clarifying nature would be desirable . . . .

WESLEY A. D'EWART,
Secretary of the Interior

The Senate Committee on Interior and Insular Affairs recommends the enactment of H.R. 6501. (1956 U.S.C. C.A., pp. 3391-94)

Exhibit G-319-A. American Petroleum Institute "*Facts and Figures*", 1958 Cent. Edition, "*Average Price Per Barrel of Crude Oil at the Well, By States, 1900-1958*:

Average United States	Year
$3.01	1958
.....	.....
3.07	1920
2.01	1919
1.98	1918
1.56	1917
1.10	1916
.64	1915
.....	.....

Exhibit C-356. September 9, 1957, Memorandum to Area Administrator, Area 3, on "Sufficiency of Discovery for Oil Shale Placer Claims", from Director, Bureau of Land Management (pp. 1-2):

The Department concluded on May 10, 1920 (47 L.D. 543) that oil shale is a valuable mineral subject to location and entry under the mining law. These "Instructions" have never been overruled or vacated and they bind the Bureau until they have been.

. . . .

In summary, the question of sufficiency of discovery for oil shale placer claims in any area occupied by the Green River formation has been resolved where the conditions are comparable to those found in the lands involved in *Freeman* v. *Summers*, supra.

Exhibit C-885. December 4, 1963, Mineral Report on Mountain Boy Claims, by James F. McIntosh, Valuation Engineer (Mining) (p. 2):

The surface of the claims is generally rolling with some timber areas, some sagebrush areas and some scrub oak and mountain spirea areas. The timber is non-commercial. . . .

There are no recent workings on the Mountain Boy 1, 6, and 7 Lode Mining Claims. This seems to indicate that the applicant plans no actual mining operations at the present time. On the other hand there is great speculative value to the land embraced in the claims for their oil shale content and only nominal value for other uses. . . .

Exhibit C-886. September 22, 1964, Report on the Mountain Boy claims, by Daniel T. Meschler, Geologist (p. 4): The climate is generally arid. Temperatures are warm to hot during the summer and cold in the winter. The area is subject to severe winter storms. . . .

Exhibit G-97. U.S.G.S. Circular No. 523, *"Organic Rich Shale of the United States and World Land Areas"* (1964) (p. 13):

Known parts of the deposits that yield 25-60 gallons of oil per ton contain about 450-500 billion barrels oil equivalent in the Piceance Basin, Colo., about 90 billion barrels in the Uinta Basin, Utah, and about 30 billion barrels in the Green River basin, Wyo., totaling about 600 billion barrels for the three basins. Approximately 160 billion barrels oil equivalent is in part of this higher grade shale averaging 30-35 gallons of oil per ton in units more than 25 feet thick and lying less than 1,000 feet below surface. Assuming that approximately half of this higher grade more accessible shale could be mined under present conditions, about 80 billion barrels of shale oil is herein considered recoverable by demonstrated mining and retorting methods.

Known oil-shale deposits that yield 10-25 gallons of oil per ton contain about 800 billion barrels oil equivalent in the Piceance Basin, Colo.; about 230 billion barrels in the Uinta Basin, Utah; and about 400 billion barrels in the combined Green River basin and Washakie Basin, Wyoming.

Known shale deposits that yield 5-10 gallons of oil per ton contain about 200 billion barrels oil equivalent in Colorado, 1,500 billion barrels in Utah, and approximately 300 billion barrels in Wyoming.

The possible extensions and possible upward revisions of the oil-shale resources of the Green River Formation are estimated to be about equal to the known resources. The larger undiscovered better grade resources are perhaps in the deeply buried parts of the formation in the Uinta Basin.

Exhibit G-722. Deposition of J. Blount Mull (pp. 12-22):

[12] average crude shale oil.

Q. One would have encountered problems, or would one not have encountered problems in refining high sulfur, high nitrogen California crude circa 1915 or 1920?

A. Excuse me. I am not sure of the question. One would have—

Q. Would one have encountered problems in refining high sulfur and high nitrogen in California crude—

A. Yes, that is true because at that time the principal —you might say the most commonly-used process in refining for reducing both sulfur and nitrogen was strong treatment with strong sulfuric which entailed large losses.

Q. Those losses roughly would vary depending upon the percentage concentration of sulfur and nitrogen, would they not?

A. That's right, yes. That's right.

Q. Is it not a fact, Mr. Mull, that petroleum products produced by thermal cracking processes would have had some of the characteristics of retorted shale crude?

A. That's right. That's right, because they are both the result of destructive decomposition.

Q. By heat?

A. Yes, heat and pressure.

Q. Do you happen to know whether any thermal cracking processes were common employment in this period, 1910 to 1920, in the United States?

A. Well, certainly not in 1910 but by 1920 there were two or three processes that were in the early stages: the Dubbs and I believe Standard of New Jersey. I have forgotten what they called [13] their process but they weren't very old then.

Q. How about the Burton process?

A. The Burton was the same category. It was the first process and I remember seeing the first Burton still on an engineering inspection trip either in my junior or senior year in college, which would have been between 1919 and the spring of 1921, and it was quite new. I don't know how old, but I would say between five and seven years that the first still was used at Whiting refinery. So it was after 1910, I am sure, and not long before 1920.

Q. Do you know, Mr. Mull, what percentage of gasoline in the latter part of, let us say, 1918 was cracked gasoline that was sold in the United States?

A. Well, I should judge a very small, just as a rough estimate, probably less than 10 to 15 percent of the total gasoline.

Q. Do you know?

A. I don't know for sure.

Q. Do you know at all?

A. Beg pardon?

Q. I mean what information do you have?

A. Just by memory.

Q. Of what?

A. Of the industry at the time.

Q. Your memory is that it was something like 10 or 15 percent?

A. Yes, of the total gasoline volume.

Q. Was cracked gasoline?

A. That's right.

Q. Cracked gasoline was relatively high in olefins, was it not?

A. That's right.

[14] Q. It was possible to make a commercially acceptable product out of it, was it not?

A. That's right.

Q. As a matter of fact, Mr. Mull, it was possible to make a commercially acceptable gasoline product out of shale crude, was it not?

A. That's right.

Q. The question to which you direct yourself in your testimony is to the comparative economics of the step, is it not?

A. That it was what?

Q. What you talk about in your direct testimony, I take it you are expressing the opinion it would have cost more to do so?

A. That's right.

Q. Than it would to deal with some petroleums?

A. That's right.

Q. But not that one could not do it?

A. That's right.

Q. In fact, Mr. Mull, there are some products out of shale crude that are acceptable that can be made without refining steps at all? Isn't that right?

MR. MESCH: What are you speaking of, what time, the present?

MR. HULBERT: I am talking about, say, 1920.

THE WITNESS: 1920? Well, the only product that I could think of would be heavy oil used under steam boilers where the specifications were very lax and indefinite at the time. I know of no other product that could have been made from shale oil without extensive refining.

MR. HULBERT: Q. But you think that some heavy boiler fuel—

[15] A. The crude oil itself could have been used, providing your fuel tanks had steam coils for keeping it in fluid condition, pumpable condition, but it could have been used under heavy boilers, heavy furnaces.

Q. Are you familiar with the present-day specifications for No. 6 fuel?

A. I haven't seen it for 10 or 12 years, I guess.

Q. Were you familiar with it 10 or 12 years ago?

A. Oh, yes.

Q. There was such a thing 10 or 12 years ago?

A. Yes.

Q. Unrefined shale crude, did it meet the specifications for No. 6 fuel oil at that time?

A. Well, I would hate to answer that question because I don't remember the specification in detail.

Q. If Mr. Harold Thorne said it did, would you be inclined to accept that as an actual statement?

A. I would.

Q. In general, is Mr. Thorne a competent—

A. I consider him so.

Q. —spokesman on questions of shale oil?

A. That's right.

Q. If you and Mr. Thorne disagreed on a point relating to the refining of shale oil, would you be inclined to prefer Mr. Thorne's opinion to your own?

A. Well, that is a hard question to answer, frankly.

Q. At one point you worked for Mr. Thorne, didn't you?

A. No, I never did. I never worked in the same installation even.

[16] Q. At page 46 of your testimony you talk about a page on your belief that Mr. Catlin was misled by the apparent Scotch success without analyzing all factors such as the lower labor costs, the high import duties there which fostered the Scottish industry.

What do you know about the Scottish industry, Mr. Mull?

A. The Scottish industry?

Q. Yes. The oil shale industry in Scotland circa 1915 or 1920.

A. Well, I know that there were a few plants operating.

Q. How do you know that?

A. From what I read in books and publications and from people who had been there.

Q. What were the lower labor costs in Scotland?

A. Well, I can't quote dollars and cents.

Q. How about pounds and shillings?

A. Well, even pounds and shillings, but I know they were considerably lower than in our country at the time, when you compare it with the price received for the products, because there was a high import duty on gasoline and since the local shale products sold for the same price and did not have to pay import duty that was so much extra profit.

Q. What was that import duty?

A. I don't remember what it was at the time.

Q. Do you know when it was put in?

A. No, I don't.

Q. Do you know whether there was a time when there was no such duty?

A. Undoubtedly there was, but—

[17] Q. Why do you say "Undoubtedly there was"?

A. Well, it had to be instituted at some time and when that time was I don't know.

Q. You do not know how much it was or when it was put into effect or when there might have been a time when it was not in effect? Is that right?

A. No.

Q. You do not know what Scottish labor costs were in figures?

A. No.

Q. Do you know what American labor costs were in figures that were higher or lower, as the case might have been? Do you know?

A. No, I don't.

Q. Do you know at what price in figures shale oil products sold in Scotland at the time you are referring to in your testimony?

A. No exact figure.

Q. Do you have inexact figures?

A. No.

Q. At page 53, at the top of that page, you say:

"The experimental refining work at Anvil Point 25 years later leaned toward proving that modern conventional petroleum refining techniques could be adapted to shale oil to produce satisfactory motor fuels, diesel fuels and furnace oils."

A. Yes.

Q. In this statement you never tell us whether the work at Anvil Point not only leaned toward proving those things, but whether or not they were proved. I wish you would tell us that now.

[18] A. Yes, I consider that the work did prove that conventional refining techniques could be modified to produce satisfactory products from shale oil.

Q. Some of the techniques do not really have to be modified. I am thinking of hydrogenation.

A. Not appreciably, no.

Q. They just run shale oil through a hydrogenation process?

A. That's right.

Q. That takes out the sulfur and the nitrogen?

A. Reduces the nitrogen, that's right.

Q. It produces a perfectly acceptable product, does it not?

A. That's right.

Q. You can make jet fuel out of shale oil, can you not?

A. Make what?

Q. Jet fuel.

A. I think so, yes.

Q. Well, it has been established, has it not?

A. Sure.

Q. They can make automobile gasoline?
A. Sure.
Q. Diesel fuels?
A. That's right.
Q. Fuel oils of various kinds?
A. That's right.
Q. The Bureau of Mines ran its automobiles and trucks on shale gasoline, did it not?
A. That's right.
Q. The Denver and Rio Grande Railway has run its locomotives—
A. Diesels, that's right.
Q. Are you familiar, Mr. Mull, with the report of the National Petroleum Council in 1951?
[19] A. Yes, I remember that it was done. I am vaguely familiar with it, although that is a long time ago.
Q. Not as long ago as 1920?
A. No. That's right.
Q. Do you recall what conclusion that report came to?
A. I couldn't quote it verbatim.
Q. Do you recall the conclusions expressed by the Bureau of Mines around the same time?
A. Yes.
Q. As to the economic feasibility of an oil shale operation?
A. Yes.
MR. WITHAM: Just a minute. Repeat that question. I may object to the form of that question.

(Question read.)

MR. WITHAM: If that question implies that the N.P.C. study reached a conclusion that oil shale was economically feasible, and the answer, then I object to the form of that question.
Is that what you are intending?
MR. HULBERT: No. Let me say I am distinguishing between conclusions expressed by the Bureau of Mines from the N.P.C. study. I appreciate, as you do, that the Bureau cooperated in the N.P.C. study but I do not attri-

bute its conclusions to the Bureau of Mines necessarily. The Bureau of Mines made some utterances of its own, which is the question I was asking Mr. Mull, whether he was familiar with them, and he said he was.

MR. WITHAM: Are you asking Mr. Mull to support a conclusion that there was a finding of economic feasibility?

[20] MR. HULBERT: No. I am just asking Mr. Mull whether he is familiar with utterances of the Bureau of Mines as to the economic feasibility of oil shale around the time of the N.P.C. study. That was the question.

THE WITNESS: My memory is that the conclusions reached by the industry in this report were slightly less optimistic than some of the figures published by the Bureau of Mines. I can't quote the difference but, in other words, the industry as I remember it estimated that crude oil, competing crude oil prices would have to be slightly higher than the Bureau of Mines figure, and I can't quote the figures.

MR. HULBERT: Q. I think the Bureau of Mines reports expressed the honest opinions of the people in the Bureau of Mines?

A. I think it did.

Q. Did you ever know the Bureau of Mines to put out a consciously dishonest report?

A. I don't.

Q. Have you ever made a study of the economics of an oil shale operation at any point in time?

A. No. I assisted in some of the calculations that were made at Rifle but I have never made any independent study on my own.

Q. Any opinion you express on the economic feasibility of oil shale would therefore be based on the published work of others?

A. And my own experience, what I have seen in the industry.

Q. Mr. Mull, I as trying to find out what work you have done on [21] the economics of oil shale. You said you have never made any calculations?

A. That's right.

Q. So you do not know what it would cost? Is that right?

A. That's right.

Q. You do not know what it would cost to mine a ton of oil shale now or at any time? Is that right?

A. No.

Q. You do not know what it would cost to refine a ton of the shale crude from a ton of oil shale?

A. Of course, those figures change, particularly from a refining standpoint, change as the years go by or with the additional development in refining techniques.

Q. The one thing one can be confident about in refining, isn't it true, Mr. Mull, is that things will get better?

A. What?

Q. Things will get better in the sense we will learn to do things we now have difficulty doing?

A. Undoubtedly.

Q. Isn't that the history of refining as you know it?

A. That is true.

Q. Isn't it also true that the basic refining processes that are or have been over the last 30 or 40 years in use have been known in principle for a very long time?

A. Well, fundamentally, yes.

Q. I mean hydrogenation goes back, does it not, to processes devised in the late 19th Century?

A. Yes, in Germany, I think.

[22] Q. The Germans used it on a commercial scale during the First World War, did they not?

A. That is right.

Q. Had there been the occasion to do so, presumably the Americans could have done as much?

A. Sure. That's right.

Q. Catalytic cracking, which has come in fairly recently—Is that true?

A. That's right; during World War II, largely.

Q. But a lot of petroleum refining catalysts were known in the 1880's, were they not?

A. Yes, that's right.

Q. So that at any point in time one can be reasonably confident, based on the history of inventiveness of man, that refining techniques can be improved?

A. That's right.

Q. One would have had that confidence about shale oil refining in 1920, would one not?

A. Yes. That is true.

Q. The events of more recent times have demonstrated how justified that confidence would have been?

A. Yes.

. . . .

Exhibit G-723. Deposition of H. M. Thorne (Part II, pp. 14, 28):

[14] Q. You held at least during the last 10 years or so of that period responsible positions directing research on the subject of oil shale, did you not?

A. Yes. And the last about six years I was research director of the entire Center which includes both oil shale and petroleum.

Q. When you refer to the entire Center you mean—

A. The Laramie Petroleum Research Center.

Q. Of the Bureau of Mines of the Department of Interior?

A. That is right.

. . . .

[28] A. I was doing experimental refining work on shale oil at Boulder, Colorado.

Q. Interrupted for a brief time by return to Bartlesville?

A. Returning to Bartlesville.

Q. At that time from a technical point could one have made the major petroleum products from Colorado shale oil?

A. Gasoline and kerosene, certainly, yes, could have been made. Fuel oil, certain grades.

Q. As of the period prior to 1920, Mr. Thorne, do you have any reason to suppose that the major products that were then being made from petroleum, so far as you may be aware of what they were, could not have been made from Colorado shale oil as a technical matter?

A. Before 1920?

Q. Yes. As a technical matter.

A. I think they could have been, those major products.

. . . .

Exhibit G-290. Prepared Direct Testimony of Department of the Interior Jack E. Phillips (pp. 61-62, 146):

(61-62) Beyond Catlin's activities, renewed general interest in the oil shales of the United States did not come about until after 1914 when the U. S. Geological Survey published the results of an investigation of the oil shales of western Colorado and Utah (Woodruff and Day. G. S. Bull. 581, 1914). This report and subsequent ones over the next few years, coupled with growing concern about the adequacy of the country's petroleum reserves, sparked considerable activity prior to 1917 in acquiring oil-shale claims and possibly in a few instances in initiating experimental work on processing of oil-shale.

. . . .

(146) Q. What was the purpose in preparing the process designs as of 1920 and as of today, i.e., the overall plan to be followed and the object sought to be accomplished?

A. The purpose in each case was to provide a basis for evaluating the prospective cost and profitability of a commercial scale, oil-shale venture. The overall plan was to approach the design problem from the position of someone who was seriously considering the possibility of engaging in such a venture, but who wanted first to determine whether or not he had a reasonable prospect of financial success. In both cases—1920 and the present

time—the designs were to be based on the then-current thinking and state of knowledge, augmented by whatever assumptions were found to be necessary and reasonable in order to cover all design aspects from the oil shale mine to finished products.

. . . .

Exhibit G-331-A. Prepared Direct Testimony of Department of the Interior Witness Bruce Netschert (pp. 15-16, 25):

(15-16) Although earlier individual geologists had examined the oil shale occurrences, the first work by the Survey was undertaken in 1913 by two geologists who examined outcrop at several widely separated points "with rather discouraging results." [2] Their report was published in 1914.[3]

This was followed in succeeding years through 1918 by the work of other Survey parties, the most significant of which was that done by Winchester. The latter mapped and studied in detail most of the outcropping of the oil shale beds in Colorado, Utah and Wyoming and took numerous samples "to determine the approximate value of the shale as a future source of shale oil." [4] Other workers investigated occurrences in Montana, Idaho and Nevada. Winchester's report, published in 1916, can be credited with bringing the oil shales to the attention of the public at large. Locally, prospectors and entrepreneurs were attracted to the oil shale, and private engineers and geologists were brought in to examine and appraise the deposits. By 1918 it was apparent that the oil shales constituted a potential resource for liquid fuels of enormous size. Partly as a result of Winchester's efforts, the Navy, in 1916, set aside portions of the government land in Utah and Colorado which contained oil shale beds as Naval Oil Shale Reserves.[5]

At the same time the public awareness of the oil shale potential was spreading, developments on the petroleum scene were focusing attention on that potential as the successor to petroleum in providing liquid fuels. The demands of World War I placed a heavy drain on do-

mestic production and brought to the attention of government and industry a still greater liquid fuel demand that lay ahead as the Automobile Age began in earnest. So rapidly had demand increased because of the War that, although production had increased apace, the discovery of new reserves was lagging. Authoritative estimates of remaining oil reserves of 5.7 billion barrels in 1914,[6] 7.6 billion barrels in 1915,[6] 6.2 billion barrels in 1917,[6] 6.7 billion barrels in 1919,[7] and 7 billion barrels in 1920 [8] gave ominous implications to the decline.

In 1917 the Director of the Bureau of Mines was reporting to the Secretary of the Interior that:

> Because of the threatened shortage of petroleum from oil fields in this country for the future these shales are considered to be the principal reserve in this country for the future supply of gasoline and other petroleum products . . . the investigations may lead to the belief that it is now commercially feasible of work selected deposits of shale in competition with oil from oil wells, and that these oil-shale reserves can be considered of immediate importance to the oil industry.[9]

In the immediate post-war years the petroleum situation worsened. In 1919 Winchester was stating with alarm:

> A glance at the figures showing the relation of the amount of petroleum consumed each year to the amount produced reveals the startling fact that the consumption has been rapidly approaching the production, and since 1915 it was even necessary to actually draw on the reserves in storage in order to meet the increased demands, and this while our oil men were straining every nerve to increase the output of petroleum both by discovering new fields and by developing to the limit the proven areas.
>
> . . . .

(p. 25) A common characteristic of announcements by these ventures was unbridled optimism. From the present vantage point it is apparent that this optimism was

in large measure genuine; for in many instances it was the organizer's own money that was being spent so freely and with such inadequate preparatory investigation.

Testimony. Department of the Interior Witness John Donnell (Transcript of 1967 Hearing, pp. 145, 172, 259, 522, 525-527):

(p. 145) A. In the area of the contested claims, the oil shale that would assay an average of fifteen gallons per ton has a continuous thickness of between five and six hundred feet. In the center of the basin the oil shale that would average more than fifteen gallons of oil per ton would be approximately 2,000 feet thick.

Q. Can you make such a comparison on the basis of, say, 30-gallon oil shale?

A. Roughly.

Q. Would you do that?

A. The oil shale in the area of the contested claims that would average 30 gallons of oil per ton would be about fifty feet thick, and in the center of the basin would be about a thousand feet thick.

. . . . .

(p. 172) Q. Do any of the contested claims contain an exposure of the Mahogany Ledge?

A. Yes.

Q. Will you state which claims?

A. The Harold Shoup No. 1, Harold Shoup No. 4, the Harold Shoup No. 3, the Mountain Boy No. 7.

Q. Do any of the claims contain within their limits an exposure of the Mahogany Bed?

A. The same claims that I have just mentioned.

Q. Is the surface of any of the other contested claims within what has been termed the Parachute Creek member of the Green River Formation?

A. Yes, it is.

Q. Will you identify the claims?

A. Mountain Boy No. 6, the Harold Shoup No. 3 and the Mountain Boy No. 1.

Q. I believe you mentioned the Harold Shoup No. 3 previously.

A. Oh, pardon me. Harold Shoup No. 2. I'm sorry.

. . . . .

(p. 259) A. Well, the oil shale is quite consistent in oil content and in thickness. Over fairly wide areas it does vary slightly and this variance could account for the difference in the thickness of the shale that would yield an average of 42 gallons per ton.

Q. Do you have an opinion, Mr. Donnell, as to whether the information shown by this exhibit with respect to the lower portion of the Parachute Creek member would be applicable to the area of the contested claims?

A. In general it would be comparable to the lithology in the lower portion of the contested claims.

MR. MESCH: I would like to offer Exhibit No. 516-A.

(p. 522) Q. Mr. Donnell, do you have any doubts that the area in this oil shale peninsula portrayed in Contestee's Exhibit 609 the surface of which lies in what you call the Evacuation creek member contained below it what you call the Mahogany Ledge?

A. No, I don't.

Q. Did not your predecessors in the geology of this area, Mr. Woodruff, Mr. Winchester, Mr. Day and Mr. George share your conviction that the rich oil shale is down there?

A. Yes, they did.

Q. And their maps showed that, did they not?

. . . . .

(p. 525) Q. Mr. Donnell, almost the last point in your testimony you were asked to calculate the oil content per acre in barrels, the 30-gallon segment of Mahogany Ledge in the area of the claims, and you gave the answer as a hundred thousand.

A. I said roughly.

Q. Approximately, of course.

A. Approximately, yes.

Q. The transcript at that point is not very clear, and I wanted to ask you, therefore, whether that figure was a figure per acre rather than per claim.

A. That was per acre.

Q. Per acre. Mr. Donnell, another point in your testimony, you said that the 15 foot segment in the Parachute—excuse me—the 15 gallon segment in the Parachute Creek member of the Green River Formation as you classified it, in the area of these claims would be about 500 to 600 feet thick. Taking 500 feet—

EXAMINER DALBY: Wait a minute.

Did you answer?

MR. HULBERT: He nodded.

THE WITNESS: Yes.

Q. (By Mr. Hulbert) What is your answer?

A. In the affirmative, yes.

Q. Taking 500 feet, to be conservative, can you tell me approximately the oil content in barrels per acre in the

. . . . .

(p. 526) area of the claims in that 15 gallon segment?

A. If you will give me a moment.

Q. I shall be happy to give you a moment.

A. Approximately 600,000 barrels.

Q. Per acre?

A. Per acre.

Q. That would not include, am I right, any oil shale that might lie in what you call the Evacuation Creek member and would also not include any oil in the—what, the lower part of the Parachute Creek member?

A. That's correct.

Q. Or in the Garden Gulch member?

A. That's correct.

Q. 600,000 barrels an acre, you would get then, for assuming you had 160 acres of claim which included this 500 foot section, you would get a total of what per claim?

. . . . .

(p. 527) A. 96 million. I said 'over."

. . . . .

Q. If you were to take—if you were to assume that each of the claims contain—a couple of them don't— this much of all of the 500 foot 15 gallon sequence below the

surface, if nothing had been eroded over the nine claims involved in this litigation, you would get something like what, 900 million barrels of oil, a ratio of a hundred million per claim, is that right?

A. That's right.

Testimony. Department of the Interior Witness James McIntosh. (Transcript of 1967 Hearing, pp. 1080-81):

(p. 1080) Q. (By Mr. Morgan) Mr. McIntosh, is it the only formal written report that you have prepared in examination of the Mountain Boy 1, 6 and 7?

A. Well, I haven't seen it, but I presume it is.

Yes, this is the only report, the only formal report I have prepared.

Q. There is no doubt in your mind, I take it, that the Mahogany Ledge underlies these three claims, is there?

A. That's right, there is no doubt.

Q. You were at the hearing last month when Mr. Donnell testified as to the amount of oil to be found in this section, in these claims, thirty gallons per ton or richer, and other (p. 1081) sections, fifteen gallons per ton or richer? Do you recall that?

A. Yes, I do.

Q. Do you agree with the substance of what he said at that time, do you not?

A. Well, it sounds reasonable. I didn't make the calculation myself.

. . . . .

Q. And it's approximately correct?

A. Yes.

Testimony. Department of the Interior Witness Alan D. Campbell (Transcript of 1967 Hearing, pp. 1471-1476):

(p. 1471) Q. Mr. Campbell, in the course of your historical survey, you reviewed some newspapers and the Shale Review, and the Wadleigh Collection, and other documents you referred to, did you not?

A. Yes.

Q. Isn't it a fact that in going through those documents that you acquired a great number of statements referring to the wide spread beliefs that the country was running out of petroleum?

MR. WITHAM: I object to that. It's beyond the scope of the direct examination.

EXAMINER DALBY: Your objection is overruled.

A. Yes.

(p. 1472) Q. (By Mr. Hulbert) And you found, did you not, in the same period quite a number of references to the health and size of the Scottish oil shale industry?

A. Yes.

Q. And its profitability?

MR. WITHAM: I object to that.

EXAMINER DALBY: Overruled.

A. What do you mean by "profitability"?

Q. (By Mr. Hulbert) The fact that it was making money, statements that it was.

A. Yes.

Q. And you found, did you not, a number of reports of statements by high officials of the United States Government encouraging interest and development of oil shale, did you not?

. . . . .

(p. 1473) EXAMINER DALBY: The objection is overruled. The witness is evidently able to answer the question.

Would you continue.

THE WITNESS: This is Van Manning, you are talking about?

(p. 1474) Q. (By Mr. Hulbert) Yes.

A. Yes.

Q. And the director of the United States Geological Survey, George Otis Smith?

A. Yes.

Q. And the Secretary of the Interior himself, Mr. Franklin K. Lane?

A. I don't remember.

Q. The Governor of Colorado?

A. Who is that? I don't remember.

Q. I have been in Colorado long enough in the course of this case that I feel I should be able to pass a civics exam. But I don't remember.

. . . . .

(p. 1475) Q. (By Mr. Hulbert) The question is whether or not you did not encounter prior to 1920 in the course of your research, reports of statements by Mr. Duce encouraging interest in and development of oil shale?

A. Yes.

(p. 1476) Q. And Mr. R. D. George, State Geologist of Colorado?

A. Yes.

Q. And Mr. Dean E. Winchester of the U. S. Geological Survey?

A. Yes.

Testimony. Department of the Interior Witness Dr. William Vogely. (Transcript of 1967 Hearing, pp. 2952-53):

(p 2952) Q. Do you, Dr. Vogely, have an opinion as a result of your study as to whether oil shale in its natural state, without processing, ever had any value?

A. Yes, I think oil shale in its natural state, without any processing, had a value as a possible source of future shale oil.

Q. If oil shale ever had any other value, what would that have been?

A. I don't think it had any other value.

EXAMINER DALBY: When you answered the question, you spoke in the past tense. Does it have a value now as a possible future—

THE WITNESS: I think it had and has. I think the question was asked in the past tense.

Q. (By Mr. Witham) Was there any time when, during the course of the testimony you have given from 1917 to the present, do you feel that this value, are there any periods during this time when you feel it had no value?

A. I think as a source of future petroleum it would have a very low value during the period of the 30's and many deposits would probably have a zero value during that period, but this would be the period of lowest value for this purpose.

Q. Could you state whether the value you are talking about is or was a present value, whether it is or has been a possible future value or what, and explain?

(p. 2953) MR. HAMILTON: Especially or what?

THE WITNESS: It had a present value as a future source of petroleum.

Q. (By Mr. Witham) Did it have a value, in your opinion, for current exploitation?

A. No.

Q. And what period of time does that answer refer to?

A. In my opinion, that answer refers to the entire period of time.

Testimony. Department of the Interior Witness George Horn. (Transcript of 1967 Hearing, pp. 3118-19):

(p. 3118) Q. (By Mr. Hulbert) Mr. Horn, I put up on this easel a map which has been admitted in this litigation as Contestee's Exhibit 609, which is basically a map of most of Township 7 South, Range 97 West, with some of the adjacent area, and ask you whether you are at all familiar with this part of the country?

A. Yes, I am. I don't know whether in this specific area.

Q. And is it not a fact, Mr. Horn, that the land embraced within the outline of the Green River Formation within the green and red line on this map which mark the top and bottom of the Mahogany Zone contain within them oil shale many times richer and thicker than your 15 gallon 15 foot test which the U. S. Geological Survey made?

A. I don't understand your question. You said the base of the Green River?

Q. The Green and red lines represent, as the legend on the map indicates, basically the top and the bottom

of the Mahogany Ledge or Zone, and I am asking you whether the lands bounded by those lines do not contain oil shale thicker and richer by many multiples than the 15 foot 15 gallon test?

A. You are right.

Q. That is correct, is it not?

(3119) A. That is correct. . . .

Q. It is a fact, is it not, Mr. Horn, that the revision of standards for classification of oil shale lands in 1956 reflected in part, as I think you have indicated in your testimony, a survey taken by persons who participated in that decision of the oil shale being then made the subject of commercial exploitation in various parts of the world—Scotland was one place you mentioned—and that that standard reflected a conclusion reached by that body as to the grade of shale that was then being mined commercially in various parts of the world, isn't that right?

A. Yes.

Testimony. Department of the Interior Lester Schramm (Transcript of 1967 Hearing, pp. 3173-3197):

(p. 3173) Q. (By Mr. Hamilton) Well, isn't the literature that you studied that relates to the period from 1920, (p. 3714) from 1915 to 1920, doesn't it indicate that there was a common view that during those years the demand for petroleum and petroleum products in the United States was increasing faster than the supply was increasing?. . .

A. (The Witness) There were statements to the effect that the demand was increasing rapidly and that there was some concern about the supply keeping pace or being adequate for an indefinite period.

Q. (By Mr. Hamilton) And prices—pardon me. Have you finished?

A. I was going to say that—you mentioned a common view. I just know that this was a view, at least.

Q. In the literature?

A. Yes.

Q. And prices had been rising quite rapidly from '15 to '20, had they not?

A. Yes.

Q. And I believe you have testified that there was a widespread knowledge of the Scottish industry?

A. Yes.

Q. And the literature recorded that the Scottish industry was successful from the technological standpoint (p. 3175) in respect of Scottish shale, did it not?

A. Yes.

Q. And it reported also that the Scottish industry was profitable during this period?

A. Yes. I don't have—the Scottish industry was profitable. I believe that it had some Government assistance.

Q. Whatever the reasons, it was, regardless, profitable?

A. It was a going industry and it was continuing.

Q. There was going industry in some other countries at this time, wasn't there?

A. Yes.

Q. And during this period. did the literature not reflect that the Federal Government was encouraging oil shale development?

A. Yes.

Q. And I believe you have already testified that there was very considerable activity—

A. —I might—the Federal Government was even encouraging activity in oil shale, was doing some research and development work. Now, as far as commercial development, I don't know about that. The word "development" was the only thing that was bothering me a little bit.

Q. There was widespread activity over on the Western (3176) Slope, wasn't there?

A. Yes.

Q. There was kind of an oil shale boom, wasn't there, over there in those days?

A. Yes.

Testimony. Department of the Interior Witness Jack Phillips (Transcript of 1967 Hearing, pp. 3289-3290):

(p. 3289) Q. Are you familiar with the fact that there were, prior to 1920, some dozen retorts, either proposed or in the process of erection in Colorado?

A. Yes, I think I have covered about 18 companies in my own testimony.

Q. Forgive me, you and Mr. Schramm to some extent have both dealt—

A. We have, there is considerable overlap.

Q. You don't have any doubt, do you, that the literature in existence by 1920 indicated that there was a great quantity of oil shale in the Green River formation, much of it rich?

A. No, I wouldn't deny it.

Q. Or the literature showed a wide-spread apprehension that the supply of petroleum and its products would become increasingly inadequate to supply an expected increase in demand?

A. This seems to be a fairly common story in the literature, yes. . . .

(p. 3290) Q. And you don't disagree with Mr. Schraam's report of wide reference in the literature prior to 1920 as to the Scottish oil shale industry and its profitability?

A. I would agree with Mr. Schraam's statement this morning on that.

Q. And there were, were there not, in the literature indications of the existence of oil shale industries in other countries?

A. Other than Scotland, yes.

Q. It is a fact, is it not, that prior to 1920 the Federal Government was encouraging interest in oil shale in Colorado?

A. Yes, I think this is an honest assessment. They were doing some work themselves.

Q. Not only by word, but by deed as well?

A. A fair amount of information on their own work and others.

Testimony. Department of the Interior Witness Donald Duncan. (Transcript of 1967 Hearing, pp. 3537, 3539-40, 3544):

(p. 3537) Q. Are you familiar with the general area of the claims that are the subject of this proceeding?

A. Yes.

Q. Have you had any occasion to make any determination as to the potential oil yield in the oil shale within the general area of the claims?

A. I have done some studies of the oil field, yes.

Q. Assuming that the oil shale sequence extends throughout the area of 160 acres within the general area of the contested claims, can you give an approximation as to the number of barrels of oil potential in a continuous sequence of rich and lean oil shale or other materials that would average 30 gallons or more oil per tone of material?

A. For what size area?

Q. 160 acres.

A. 160 acres. Of 30 gallons per ton shale. I think I may have made this computation. (Pause.) I don't believe I've made that computation. As I recall, there's around 40 feet of shale that averages 30 gallons, or a little better. This information, I believe, was summarized by Donnell in one of the exhibits. If the corrections for the specific gravity of rich and lean shale were made and produced little, about 40 feet or a little more of this sequence would average about 30 gallons per ton.

. . . . .

(p. 3539) THE WITNESS: I have finally found this computation of 30-gallon shale.

Q. (By Mr. Mesch) Within 160 acres within the general area of the claims?

A. Yes.

Q. What is the computation?

A. In this I figured 41 and 6 tenths feet of shale (p. 3540) averaging 30.5 gallons per ton, figured about 14 million barrels of oil in a 160-acre plot.

Testimony. Department of the Interior Witness Paul L. Russell (Transcript of 1967 Hearing, pp. 4357-58):

(p. 4357) Q. Did the literature that you read, other than that listed on the sheet, cover quite a volume?

A. I really can't answer this objectively because if I could recall what I read that I didn't list, I would have listed it, so that I really can't answer this. There are some volumes that I read in part that I found dealt primarily with processing or with some aspect other than mining, and then I laid these aside; I didn't list them; I didn't use them. There are others that I may have read that contained essentially the same information that is referenced in some other place and, therefore, I didn't list this. I just can't answer this question. It may be large; it may be small. I think it would be small.

Q. It is true that your reading was not restricted to articles that pertain to the narrow question of mining as such?

A. Oh, certainly not.

Q. You would consider then that you read widely enough in this general field to have given you a pretty complete picture of the literature of that particular era?

A. I think so.

Q. In that connection, I suppose that it is true that you found in that reading that as of about 1917, 1918 and later, and perhaps even earlier, there was great interest expressed in the possibility of producing oil from oil shale?

A. Yes, sir.

(p. 4358) Q. This was included not only in private publications but in Government publications as well?

A. Yes, sir.

Q. Also, I take it that this literature study would have revealed that about this time there was expressed in the publications considerable concern as to the decline of available crude oil reserves?

A. Yes, sir.

Q. And that also there were many articles and statements indicating that there was a probability or possibility that this deficiency in crude oil reserves could be solved by the development of an oil shale industry?

A. Yes, sir. I'd like to clarify one point. The crude oil reserves you're referring to are of the United States, are they not?

Q. Yes, sir.

A. Correct.

Testimony. Department of the Interior Witness James McIntosh (Transcript of 1967 Hearing, pp. 4505-4507):

(p. 4505) Q. Mr. McIntosh, in the course of your economic study and later in preparing your compendium, it is clear, isn't it, that what you have done, you had quite a lot of exposure to literature regarding oil shale?

A. Yes.

Q. Including literature which appeared prior to 1920?

A. Yes.

Q. And it is true that that literature contains, does it not, a substantial volume of statements from various sources, public and private, during the latter half of the second decade (4506) of this century which commented upon a supposedly impending shortage of petroleum or the threat of one?

A. Yes, there was a lot of literature on that subject.

Q. And during that same period, the literature contained, did it not, many statement, public and private, expressing or encouraging interest in the oil shale of the Green River formation, particularly in northwestern Colorado? I am not at this point asking you whether you agree that the statements are accurate or fair or anything like that but simply that the statements in fact were made and do appear?

A. Well, I don't think there are many statements actually specifically encouraging people. There were many optimistic statements that would or could encourage by implication.

Q. Well, statements which, if taken as accurate, would encourage an interest or could be expected to?

A. Yes, by implication.

Q. Whether they were intended to or not is another question, and there were, during this same period, a

number of statements commenting upon the Scottish oil shale industry?

A. Well, yes, generally the literature, part of this literature, was a statement about the Scottish—

Q. It was stated that the Scottish oil shale industry was at that time profitable?

A. It was generally stated so, but there were some (4507) exceptions to that.

Q. And it was a fact, was it not, that during that period the Scottish oil shale industry was profitable in that it was making money and paying dividends?

A. Yes, it was to a limited extent profitable. There were some reservations about that.

Q. And there were, were there not, many individuals and companies engaged in activities of one kind or another in connection with oil shale, particularly in northwestern Colorado, reflected in the literature?

A. Yes, there were.

Testimony. Claim Owners' Witness Arthur Brown (Transcript of 1967 Hearing, p. 4818):

Q. Can you tell us briefly what is in the approximate richness and extent of the Mahogany Ledge or the Mahogany Zone in this area, in the area shown on 609?

A. In our core hole we found 73 continuous feet averaging better than—averaging 25 gallons per ton. This is the Bureau of Mines method of evaluating richness in terms of the number of continuous feet which volumetrically average out to a chosen number of gallons per ton which can be recovered by Fisher assay.

In this Bureau of Land Management core hole there were 77 feet averaging 25 gallons per ton, and by extrapolation between the two we think there are 73 feet on Mountain Boy 6 and 7, because the thickness of the Mahogany Zone increases as you go toward the north toward the center of the basin.

Complaint. (Entered August 20, 1974):

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLORADO

Civil Action No. 74-739

SHELL OIL COMPANY, and
D. A. SHALE, INC., PLAINTIFFS

v.

ROGERS C. B. MORTON
Secretary of the Interior, DEFENDANT

COMPLAINT

Plaintiffs SHELL OIL COMPANY and D. A. SHALE, INC., by their attorneys, for their complaint, allege:

Nature of Action

1. This is a suit for judicial review of a decision of the Board of Land Appeals, Office of Hearings and Appeals, United States Department of the Interior, *United States* v. *Frank W. Winegar et al.*, IBLA 70-549, decided June 28, 1974, reported at 16 IBLA 112. The decision declared plaintiffs' oil shale placer mining claims invalid on the grounds that oil shale has at least since 1917 never been and is not now a valuable mineral. A true copy of the Board's decision is annexed hereto as Appendix A.

Parties

2. Plaintiff Shell Oil Company is a corporation duly incorporated under and existing by virtue of the laws of the State of Delaware and has its principal office and place of business at Houston, Texas. Plaintiff D. A. Shale, Inc., is a corporation duly incorporated under and existing by virtue of the laws of the State of Colorado and has its principal office and place of business at Denver, Colorado.

3. The defendant, Rogers C. B. Morton, here sued in his official capacity, is the duly qualified and acting Secretary of the Interior of the United States, having his official place of business at the seat of the government in Washington, D.C. Under and by virtue of 9 Stat. 395; 5 U.S.C. § 485; 43 U.S.C. §§ 2, 1201; 1950 Reorganization Plan No. 3, 15 F.R. 3174, 64 Stat. 1262, the defendant is charged with the control, direction and supervision of all officers and employees of the Department of the Interior (including the Board of Land Appeals), the administration and enforcement of all laws relating to the public lands and to mining claims thereon, and the issuance of rules and regulations relating thereto.

Jurisdiction and Venue

4. This action arises under the Constitution, more particularly the Fifth Amendment, and the mining laws of the United States, including 30 U.S.C. §§ 22-38, pursuant to which plaintiff Shell Oil Company claims vested rights in and to the Mountain Boy 6 and 7 Oil Placer Mining Claims and plaintiff D. A. Shale, Inc., claims vested right in and to the Harold Shoup 1, 2, 3, and 4 Oil Shale Placer Mining Claims. This action involves the rights of the plaintiffs to enjoy and possess the said claims, and to obtain United States patents for them, and the duty of the defendant owed to the plaintiffs to administer the laws and to process applications for patents upon a proper construction of the laws and rules and regulations promulgated thereunder. The matter in controversy, exclusive of interest and costs, exceeds in value the sum of $10,000. The jurisdiction of this Court is invoked under 28 U.S.C. §§ 1331, 1361, and 2201; and under the Administrative Procedure Act (5 U.S.C. §§ 701-706).

5. Venue is established in this Court under 28 U.S.C. 1391(e).

Background of the Present Controversy

6. Each of the said mining claims was located upon the vacant, unappropriated public domain, and was perfected by a discovery of oil shale, prior to February 25,

1920, the effective date of the Mineral Leasing Act of 1920, 41 Stat. 437, 30 U.S.C. §§ 181 *et seq.* Prior to that date, such lands containing valuable deposits of oil shale were subject to private appropriation, by location and discovery, pursuant to the mining laws, including 30 U.S.C. §§ 22-38. The lands covered by the said mining claims contain extensive, high grade oil shale deposits in the Piceance Creek Basin, Green River Formation. These deposits have at all relevant times been recognized as typical of the most valuable oil shale deposits in the United States and throughout the world.

7. In 1916, prior to the location of the said mining claims, the United States Geological Survey, an expert scientific arm of the Secretary and Department of the Interior established by Congress to aid in the administration of the public land laws, formally classified all of the lands embraced within the said mining claims, and other lands, as valuable mineral lands. This classification was made because of the presence of oil shale deposits that were then regarded as a valuable source of future supplies of oil, gas, and other minerals. A number of changes have since been made in the oil-shale classification of other land, but the land within the said mining claims has continued from 1916 without interruption to the present as officially classified, for purposes of administration of the public land laws, as valuable mineral land.

8. During the several years prior to the Mineral Leasing Act of 1920, federal officials including the Secretary of the Interior encouraged the location of oil shale mining claims and related efforts to bring about commercial production of oil and other products from the oil shale deposits of the Green River Formation, in recognition that supplies of conventional petroleum were dwindling, that demand was increasing, that lesser oil shale deposits had been successfully worked in Scotland and other countries, and that its potential to produce oil made oil shale deposits, such as those in the said mining claims, valuable. During these years they also indicated, to Congress and to the general public, that where locations were made and oil shale deposits such as those

within the said mining claims were found, valid oil shale mining claims could be initiated and maintained under the mining laws.

9. The Mountain Boy 6 and 7 claims were surveyed in 1917, with a view towards their location as mining claims, to correspond to the Northwest Quarter and the Southwest Quarter, respectively, of Section 14, Township 7 South, Range 97 West, 6th Principal Meridian, in Garfield County, Colorado. They were located on the basis of this survey as of January 1, 1918, and again as of January 1, 1919. Thereafter by mesne conveyances they became the property of plaintiff Shell Oil Company.

The Harold Shoup 1, 2, 3, and 4 claims were located as of September 29, 1917, and again as of January 1, 1919, to cover, respectively, the Southeast Quarter, the Northeast Quarter, the Northwest Quarter, and the Southwest Quarter, of Section 23, Township 7 South, Range 97 West, 6th Principal Meridian, in Garfield County, Colorado. Thereafter by mesne conveyances they became the property of plaintiff D. A. Shale, Inc.

10. In enacting the Mineral Leasing Act of 1920, Congress removed oil shale from subsequent virtually free private appropriation under the mining laws, in recognition that oil shale deposits of the Green River Formation, such as those within the said mining claims, were too valuable to continue under the regime of the mining laws and should thereafter only be available by federal lease. Congress recognized that some valid oil shale mining claims had already been initiated, and expressly excepted such claims and the lands embraced within them from the leasing act, specifying that they were to continue to be governed by the mining laws, including those that provide for the issuance of patents for mining claims.

11. In 1920 the first oil shale patent application to reach the Commissioner of the General Land Office (the arm of the Department of the Interior then authorized to process patent applications and to issue patents) was referred, at the Commissioner's initiative, to the Secretary of the Interior for guidance. Wishing to maximize the leasing potential of the Green River Formation, the

Commissioner invited the Secretary to deny the existence of any valid oil shale placer mining claim. The Secretary responded however that the law and the facts were too clear for that, and issued, as a general rule and regulation, *Instructions* that lands valuable for oil shale, such as those within the Mountain Boy and Harold Shoup Claims, had been open to private appropriation under the mining laws prior to the Mineral Leasing Act, and that properly initiated oil shale placer mining claims could proceed to issuance of patents from the United States. These *Instructions* were published at 47 L.D. 548 (May 10, 1920); they promptly received substantial publicity in the oil shale areas of Colorado and came to the attention of the Congress. The *Instructions* have remained in effect without interruption to the present, and have been consistently followed, except (so far) with respect to the Mountain Boy and Harold Shoup claims.

12. The *Instruction* resulted later in 1920 in the issuance of patents for the claims (the La Paz 1-14 claims) that had occasioned the *Instructions*, and altogether over the next forty years, in the issuance of patents for two thousand three hundred twenty six oil shale placer mining claims within the Green River Formation, covering an aggregate of 349,088 acres. Throughout this period, and continuing to the present, the Secretary of the Interior (including subordinate officials and agencies) has otherwise recognized and confirmed the valuable nature of oil shale deposits such as those within the Mountain Boy and Harold Shoup claims, by means including reservations to the United States of oil shale deposits (because of their value) in patents issued pursuant to the homestead laws. The Secretary of the Interior has defended the propriety of this course of conduct in litigation in this Court. *E.g.*, *Brennan* v. *Udall*, 251 F. Supp. 12 (1966), *affirmed*, 379 F.2d 803 (10th Cir.), *cert. denied*, 389 U.S. 975 (1967).

13. The Secretary of the Interior's rule, regulation, and practice of recognizing the mineral value of oil shale deposits such as those within the Mountain Boy and Harold Shoup claims, was extensively reexamined by Interior itself in the case of *Freeman* v. *Summers*, 52

L.D. 201 (1927), and by the Congress of the United States and by other parts of the Executive Branch in 1930 and 1931 (in a review of the *Instructions, Freeman* v. *Summers*, and Secretary of the Interior's campaign to invalidate oil shale claims for lack of complete and literal satisfaction of the "assessment work" prescriptions of the mining laws). Following these reexaminations, the Secretary of the Interior continued to recognize the value of oil shale, and the patentability of pre-Mineral Leasing Act claims, with the approval of the Congress and the Executive. In all legally relevant respects, the said 349,-088 acres are identical with the lands involved here, and if at any time between 1920 and the early 1960's the question of the patentability of these lands had been presented to the Secretary of the Interior, patents would have been issued.

14. Around 1960, subordinate Interior officials advocated, and in the early 1960's top echelon Interior officials decided, that no more oil shale claims be recognized as patentable or otherwise valid. The patenting of oil shale claims was immediately stopped, and favorable processing of pending patent applications was immediately reversed. The decisions that produced these dramatic reversals in Interior's long-standing rules and practices were made in proceedings that involved no advance notice to owners of unpatented oil shale claims, no opportunity for the owners to participate, no publication in the Federal Register of proposed (or final) rulemakings, and no other public indication of their course. These proceedings resulted in private internal decisions to oppose the patenting of any and all oil shale claims on the basis of various contentions as to fact and law. These included contentions that certain aged, and long since nullified, adverse administrative adjudications concerning lack of complete and literal performance of assessment work, had become revivified so as to invalidate oil shale claims, and, where such adverse administrative adjudications had not occurred, contentions, pressed as a test case in the contest proceedings below for which judicial relief is herein sought, that no oil shale claim was prior to 1920, had ever since been, or now was, valu-

able for minerals. In pursuance of these determinations, Interior officials in 1964 instituted Contest proceedings C-359 and C-360 against the Mountain Boy and Harold Shoup claims, for which patent applications had been filed in 1958 and 1960 respectively. These contests went to trial in 1967 before a Hearing Examiner, and on April 17, 1970, he rendered a decision that made extensive factual findings and that held that the said mining claims were entitled to go to patent under the Department's long-established rules, regulations and practices with respect to oil shale mining claims. Interior officials prosecuted an appeal from this decision, and on June 28, 1974, the Board of Land Appeals rendered a decision, a copy of which is attached hereto as Appendix A, on that appeal. The Board's decision, although accepting the Hearing Examiner's factual findings, disagreed on questions of law and overthrew Interior's rules, regulations, and practices concerning oil shale claims and declared the claims invalid.

15. The Board of Land Appeals was created within the Department of the Interior subsequent to the trial in 1967, and plaintiffs allege only error, but no other improper conduct, on the part of the members of the Board who signed the said decision. In creating the Board the Secretary of the Interior delegated to it his full authority to render decisions with respect to mining claims and patent applications for such claims, and the Board's said decision is administratively final. Plaintiffs have no other administrative recourse of right and have exhausted all possible appropriate or necessary administrative remedies.

16. The Board's decision is erroneous, arbitrary and capricious, not supported by substantial evidence on the record as a whole, violative of due process and equal protection constitutional guarantees, and otherwise improper, for reasons including the following:

(a) Oil shale deposits such as those within the Mountain Boy and Harold Shoup claims were in fact valuable for minerals at the time of their initiation, and have continued to be valuable for minerals to the present;

(b) There is no legal basis for terminating a validly initiated and perfected mining claim because of market fluctuations or other economic changes, except that where valuable minerals have been worked out and the land no longer contains valuable minerals, a mineral patent may not be obtained, but this exception does not apply in the present action;

(c) It is logically and historically fallacious to conclude, as the Board did, that the absence of sustained commercial domestic production of shale oil and related by-products shows that oil shale is not valuable. Why such production has not occurred was not put in issue by the pleadings and is not susceptible of reliable proof; a number of hypotheses have been advanced why our nation's valuable oil shale resources have not been developed, including other short term financial interests, Interior Department attacks upon oil shale claims, and an often unfavorable attitude within the federal government with respect to the stability of title to oil shale lands and with respect to commercial development of oil shale.

(d) It is erroneous to conclude, as the Board did, that the present value of a mineral deposit cannot be shown by reason of prospects of foreseeable future production at a profit. Indeed, since long development times are necessary to utilize a mineral resource such as oil shale, its present value necessarily depends upon such future prospects of profitability. At all relevant times, oil shale deposits such as those within the Mountain Boy and Harold Shoup claims have been presently valuable because of the future prospects of profitable production of shale oil and related products therefrom.

(e) In 1920 the Secretary of the Interior adopted, and thereafter until the instant proceedings he and his successors maintained, a rule and regulation that oil shale deposits such as those within the Mountain Boy and Harold Shoup claims were valuable and eligible for patent. Promulgation of such a rule and regulation was and is within the statutory authority of the Secretary of the Interior. The rule and regulation were reasonable. The rule and regulation were well publicized,

notorious, and thoroughly reviewed by other agencies and branches of the federal government. Plaintiffs and other owners of unpatented oil shale mining claims were entitled to rely, and did rely, upon the rule and regulation, and are entitled to have the rule and regulation applied to the Mountain Boy and Harold Shoup claims. The rule and regulation were repeatedly and consistently adhered to for at least forty years, and there do not exist compelling and overwhelming circumstances or developments which would legitimize the present efforts of Interior officials to overthrow and depart from the rule and regulation and to do so retroactively, to plaintiffs' detriment. The Secretary of the Interior has played a large role in formulating the law applicable to oil shale placer mining claims within the Green River Formation; that law now governs the Secretary of the Interior himself, just as it has for decades past bound all others.

17. Plaintiffs' oil shale claims are valid and are eligible for patent. The defendant has a duty to issue patents for such claims upon proper application therefor. Such applications have been filed and are presently pending. The defendant and his predecessors in office and their subordinates have thoroughly investigated the validity and patentability of plaintiffs' claims, and properly regard them as valid and patentable except with respect to the contention of lack of value of oil shale.

WHEREFORE, the plaintiffs pray the Court:

1) To reverse the June 28, 1974, decision of the Board of Land Appeals;

2) To require the defendant to process plaintiffs' pending patent applications expeditiously, without regard to the contention that oil shale has been and is lacking in value, and comprehensively, either upon the basis of the existing administrative record or, upon good cause shown, upon the basis of that record and one further procedurally proper administrative proceeding;

3) To grant such other and further relief as the Court deems reasonable, just and proper.

Respectfully submitted,

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Dated: August —, 1974

Answer. (Entered October 21, 1974):

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLORADO

Civil Action No. 74-739

SHELL OIL COMPANY, ET AL., PLAINTIFFS

v.

ROGERS C. B. MORTON, DEFENDANT

ANSWER

Defendant answers the complaint as follows:

First Defense

The complaint fails to state a claim upon which relief can be granted.

Second Defense

1. Defendant admits the allegations in paragraph 1, with the exception of the stated grounds for the decision of the Interior Board of Land Appeals. Defendant affirmatively alleges that the principal holding of the Board was that the mining claims in question were not supported by the discovery of valuable mineral deposits within the limits of the claims either as of 1920 or as of the date of the administrative hearing.

2. Defendant admits the allegations in paragraph 2.

3. Defendant admits the allegations in paragraph 3.

4. Defendant admits the allegation in the third sentence of paragraph 4. The remaining allegations in that paragraph are conclusions of law which require no answer.

5. The allegation in paragraph 5 is a conclusion of law which requires no answer.

6. Defendant admits that each of the mining claims in question was purportedly located prior to February 25, 1920, upon vacant, unappropriated public domain but denies that any of the claims were perfected by a

discovery. The allegations in the second sentence of paragraph 6 are conclusions of law which require no answer. Defendant admits the allegations in the third sentence of paragraph 6, with the exception that defendant denies that the deposits in question are "high grade oil shale deposits." Defendant denies the allegations in the last sentence of paragraph 6.

7. Defendant admits that the lands in question were classified as of May 23, 1916, "as mineral lands, valuable as a source of petroleum and nitrogen." Defendant denies the allegations in the first sentence of paragraph 7 to the extent of any inconsistency with the foregoing. Defendant denies the allegation in the second sentence of paragraph 7 and affirmatively alleges that the classification was made on the inference that the lands contained oil shale deposits and that oil shale deposits might have some future, potential value as a source of petroleum and nitrogen. Defendant admits that the lands have remained classified "as mineral lands, valuable as a source of petroleum and nitrogen." Defendant denies the allegations in the last sentence of paragraph 7 to the extent of any inconsistency with the foregoing.

8. Defendant denies the allegations in paragraph 8.

9. Defendant admits the allegations in the fourth sentence of paragraph 9 but denies the remaining allegations in that paragraph.

10. The allegations in paragraph 10 are conclusions of law which require no answer.

11. Defendant admits the allegations in the first sentence of paragraph 11. Defendant affirmatively alleges that, in a memorandum of April 20, 1920, for the Secretary of the Interior, the Commissioner of the General Land Office sought instructions with respect to oil shale placer patent applications. Defendant further alleges that such letter constitutes the best evidence as to what the Commissioner did. Defendant admits the issuance, on May 10, 1920, of Instructions published at 47 L.D. 548 and affirmatively alleges that such Instructions constitute the best evidence as to what the Secretary did. Defendant admits the allegation in the first clause of the fourth sentence in paragraph 11 but is without knowledge

or information sufficient to form a belief as to the truth of the remaining allegations in that sentence. Defendant admits the allegation in the clause of the last sentence of paragraph 11 but denies the remaining allegations in that sentence.

12. Defendant admits the issuance of the patents described in the first sentence of paragraph 12 but denies that such patents resulted from the proper application of the 1920 Instructions. Defendant admits that deposits of oil shale have been reserved in patents under the homestead laws but denies that such reservations constituted recognition of the present value of oil shale required to establish a valid discovery under the mining laws. The allegation in the last sentence of paragraph 12 is a conclusion of law which requires no answer.

13. Defendant admits the allegations in the first sentence of paragraph 13 but denies that the decision in *Freeman* v. *Summers*, 52 L.D. 201 (1927), reflects a proper interpretation of the applicable law. Defendant admits that certain employees of the Department of the Interior continued to patent oil shale claims on the erroneous belief that *Freeman* v. *Summers* correctly stated the applicable law. Defendant denies the allegations in the second sentence of paragraph 13 to the extent of any inconsistency with the foregoing. The allegations in the last sentence of paragraph 13 are conclusions of law which require no answer.

14. Defendant admits the allegations in the second, sixth, seventh and eighth sentences of paragraph 14, with the exception of the first phrase of the sixth sentence which constitutes an opinion of plaintiffs not requiring an answer, and the last phrase of the seventh sentence which constitutes a legal interest by plaintiff not requiring an answer. Defendant affirmatively alleges that, around 1960, Interior Department officials recommended, and it was decided, that certain concepts reflected in *Freeman* v. *Summers* should be challenged and that the validity of oil shale claims should be contested in appropriate cases. Defendant denies the allegations in the first sentence of paragraph 14 to the extent of any inconsistency with the foregoing. Defend-

ant affirmatively alleges that, in appropriate cases, notice of administrative contests to adjudicate the validity of unpatented oil shale mining claims was given to the mining claimants, together with the right to an administrative hearing, and defendant denies the allegations in the third sentence of paragraph 14 to the extent of any inconsistency with the foregoing representation. Defendant admits that no rulemaking type of notice was given and that no rulemaking proceedings were conducted but denies that such were required. Defendant affirmatively alleges that the Secretary of the Interior issued a title clearance memorandum to the effect that all relevant issues should be considered in the determination of the validity of oil shale mining claims. Defendant denies the allegations in the fourth sentence of paragraph 14 to the extent of any inconsistency with the foregoing representation. The allegations in the fifth and ninth sentences of paragraph 14 are conclusions of law which require no answer.

15. Defendant admits the allegations in paragraph 15.

16. The allegations in paragraph 16 are conclusions of law which require no answer but which defendant, nevertheless, denies.

17. Defendant admits that applications for patent were filed. The remaining allegations in the first three sentences of paragraph 17 are conclusions of law which require no answer but which defendant, nevertheless, denies. Defendant denies the allegations in the last sentnc of paragraph 17.

Defendant denies every allegation of the complaint which is not expressly admitted.

WHEREFORE, defendant respectfully requests that the complaint be dismissed and that defendant be awarded his costs.

Respectfully submitted,

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/s/ [Illegible]
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Plaintiffs' Motion for Summary Judgment. Entered April 15, 1975:

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLORADO

Civil Action No. 74-F-739

SHELL OIL COMPANY and D.A. SHALE, INC., PLAINTIFFS

v.

ROGERS C. B. MORTON
Secretary of the Interior, DEFENDANT

PLAINTIFFS' MOTION FOR
SUMMARY JUDGMENT

COME NOW plaintiffs Shell Oil Company and D. A. Shale, Inc., by and through their attorneys, and move this Court for an Order granting summary judgment of this action in favor of plaintiffs and against defendant herein.

This motion is based upon the following grounds:

1. This is an action for judicial review of a decision of the Interior Board of Land Appeals, Department of the Interior, entitled *United States* v. *Frank W. Winegar*, et al., 16 IBLA, dated June 28, 1974, which rejected plaintiffs' applications for patents on their six placer mining claims located for oil shale in the Green River Formation of Colorado and declared the claims invalid on the grounds that oil shale was not a valuable mineral under the mining laws when the claims were located in 1917 and 1918 or at the time of the enactment of the Mineral Leasing Act in 1920 or at the time of the administrative hearing in 1967. A copy of said decision is attached to the complaint filed in this action.

2. The administrative record shows that oil shale of the Green River Formation was a valuable mineral under the mining laws at all relevant times.

3. From 1916 to 1920 the defendant's predecessors in office and their subordinates formulated and applied in preliminary fashion, and from 1920 and into 1960 they publicly and consistently applied in formal and definitive fashion an eminently reasonable rule, well within their statutory authority, that oil shale of the Green River Formation was a valuable mineral and subject to location and patenting under the mining laws.

4. The Department of the Interior's rule with respect to the location and patenting of oil shale of the Green River Formation was thoroughly reviewed and ratified by the Congress.

5. The said rule was applied in many ways by the Department of the Interior in the course of its administration of the public land laws including the patenting from 1920 to 1960 of 2,326 oil shale claims geologically indistinguishable from the claims involved in this proceeding.

6. The Department of the Interior may not overthrow said rule retroactively to the detriment of plaintiffs.

7. Defendant is estopped from acting contrary to the said rule with respect to plaintiffs or their oil shale mining claims.

The Court ordered on January 27, 1975, and the parties have stipulated, that this action is appropriate for and will be heard and decided on cross motions for summary judgment, on the basis of the administrative record in the *Winegar* proceeding.

In support of this motion and in accordance with this Court's order of January 27, 1975, and the related stipulation of the parties, plaintiffs are filing herewith a brief including proposed conclusions of law, a separate compilation of Plaintiff's Proposed Findings of Fact, and a proposed order of judgment.

Respectfully submitted,

Defendant's Motion for Summary Judgment. Entered April 17, 1975:

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLORADO

Civil Action No. 74-F-739

SHELL OIL COMPANY, ET AL., PLAINTIFFS

v.

ROGERS C. B. MORTON, DEFENDANT

DEFENDANT'S MOTION FOR SUMMARY JUDGMENT

Pursuant to Rule 56, Federal Rules of Civil Procedure, defendant moves for summary judgment on the grounds that there is no genuine isue as to any material fact and defendant is entitled to judgment as a matter of law.

This motion is based upon the complaint, defendant's answer thereto and the entire administrative record of the Department of the Interior in the contest proceeding entitled *United States* v. *Frank W. Winegar, et al.*, Colorado Contests No. 359, 360.

Respectfully submitted

SUPREME COURT OF THE UNITED STATES

No. 78-1815

CECIL D. ANDRUS, SECRETARY OF THE INTERIOR, PETITIONER

v.

SHELL OIL COMPANY, ET AL.

ORDER ALLOWING CERTIORARI. Filed October 1, 1979

The petition herein for a writ of certiorari to the United States Court of Appeals for the Tenth Circuit is granted.

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